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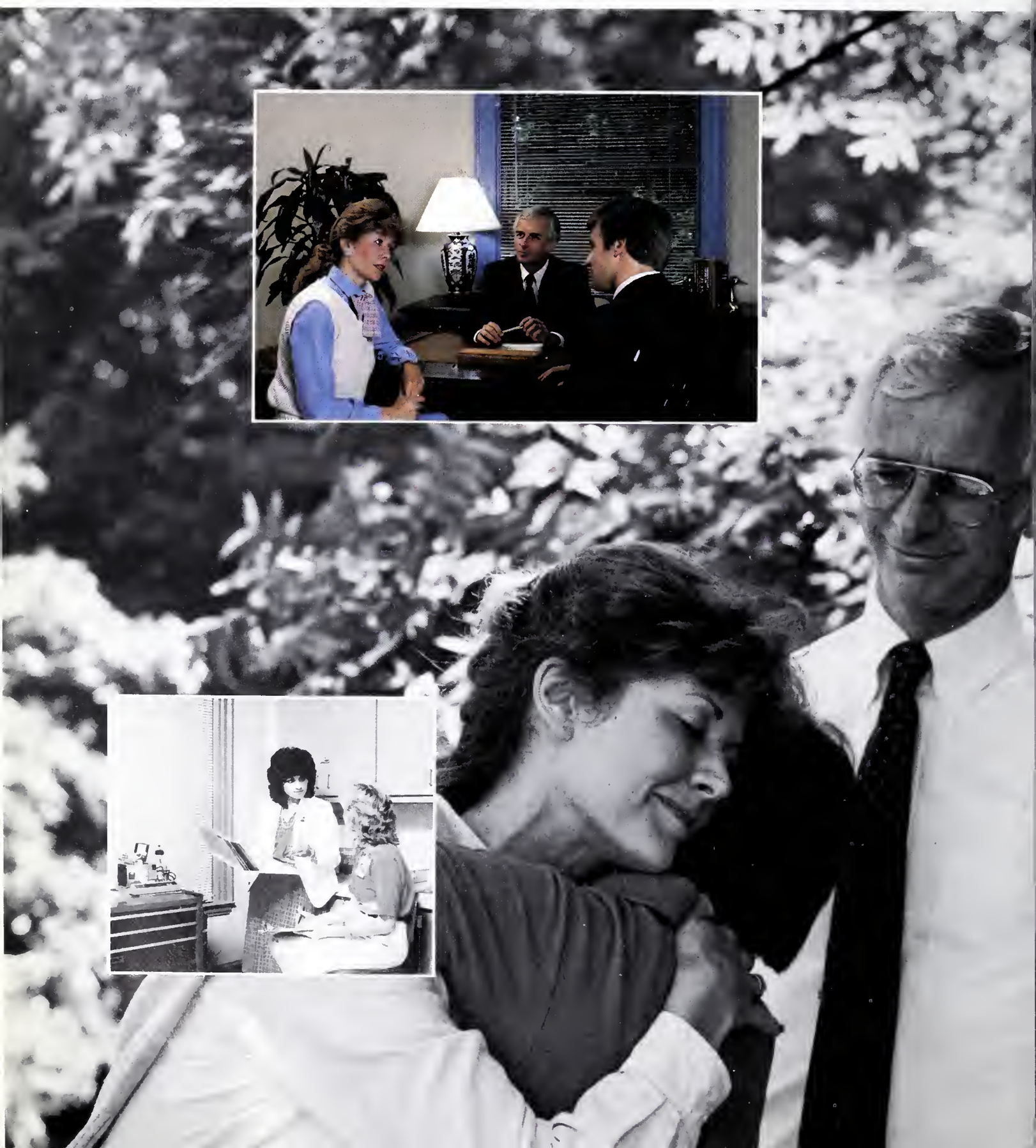
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ARKANSAS MEDICINE TODAY



TB kids on fast track

Children's tuberculosis is being successfully treated in Arkansas with just one month of daily isoniazid and rifampin, followed by eight months of semiweekly treotments, reports Dr. Rosalind S. Abernathy of the University of Arkansas, Little Rock.[1] In addition to halving treotment time, the new TB therapy reduces drug costs by three-fourths. Most symptoms cleared in o few weeks, remorks Dr. Abernathy, ond all cultures were negative in two months.[2] This is especially significant because in 1981, 1,681 of the 27,373 new known U.S. TB victims were under 14 years old. And it's in the tradition of Arkansos medicine, which pioneered the adult nine-month TB theropy.[1]

More than a pipe dream

Inhalation patterns may determine why cigarette smokers have higher incidences of carcinoma of the lung, emphysema ond heart disease than pipe smokers. Researchers at the University of Arkansos for Medicol Sciences ond the Little Rock VA Medical Center found that pipe smokers who hod never smoked cigorettes inhaled only minimally.[3] This was evidenced by low plasma nicotine concentrations after pipe smoking. By contrast, those who smoked both pipes and cigarettes had high plasma nicotine levels and therefore must hove inhaled pipe smoke. Most former cigorette smokers who had switched to pipes had low plasmo nicotine, indicating they had stopped inhaling. This suggests that some individuals can indeed reduce the risks of smoking by switching to o pipe. You can determine whether they've stopped inhaling by checking their plasma nicotine or carboxyhemoglobin.

References: 1. *Medical World News*, Mar 14, 1983, p 126.
2. Abernathy RS, *et al. Pediatrics 72* 801-86, Dec 1983
3. McCusker K, McNabb E, Bone R. *JAMA 248*.577-578, Aug 6, 1982.

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Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).
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Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. I.V. administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.
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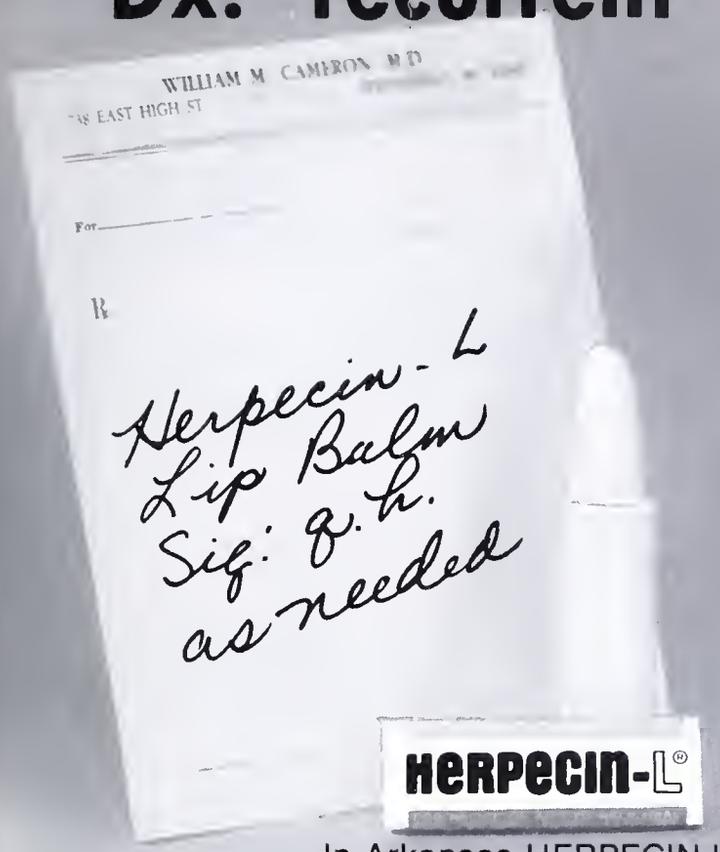
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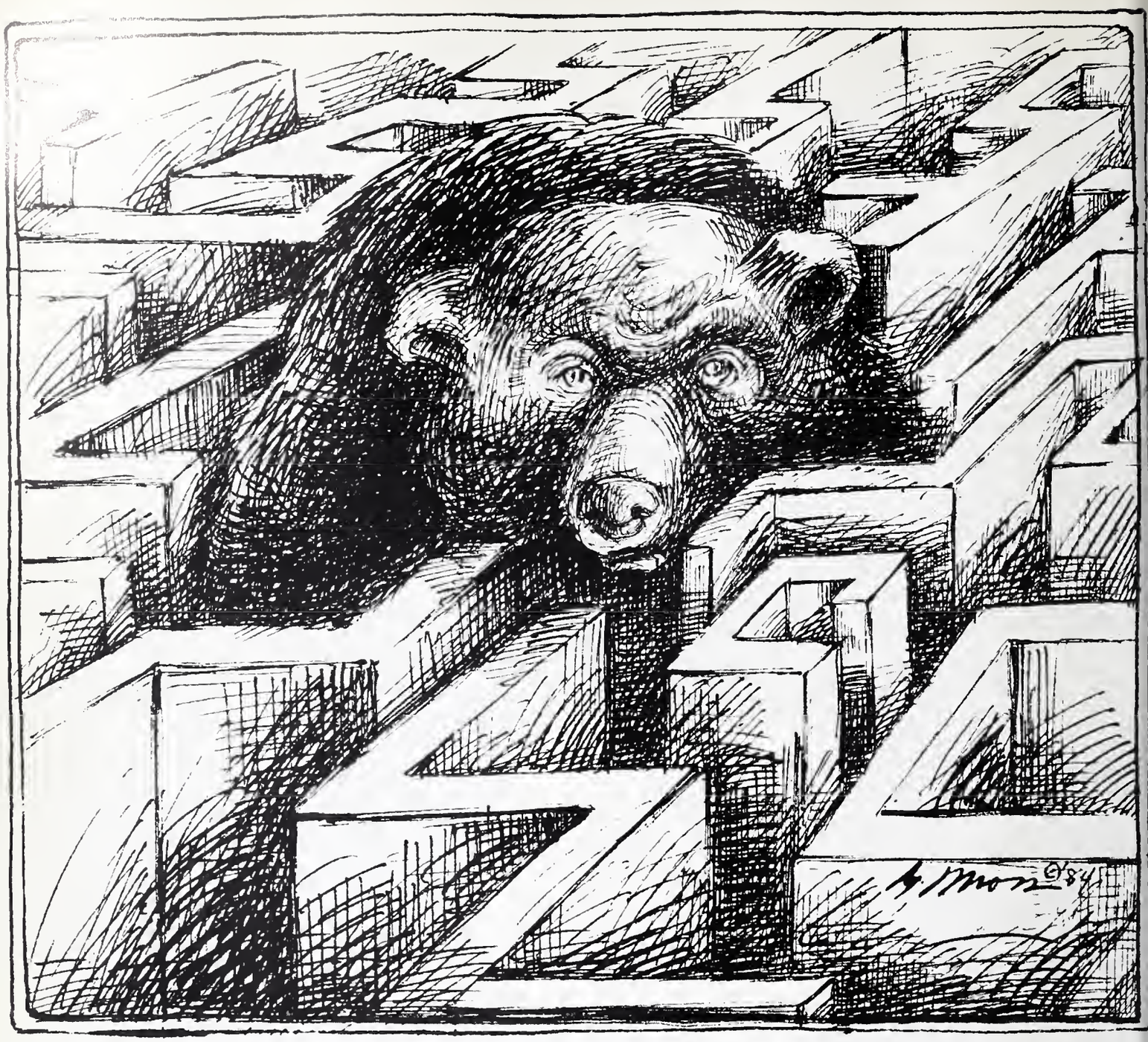
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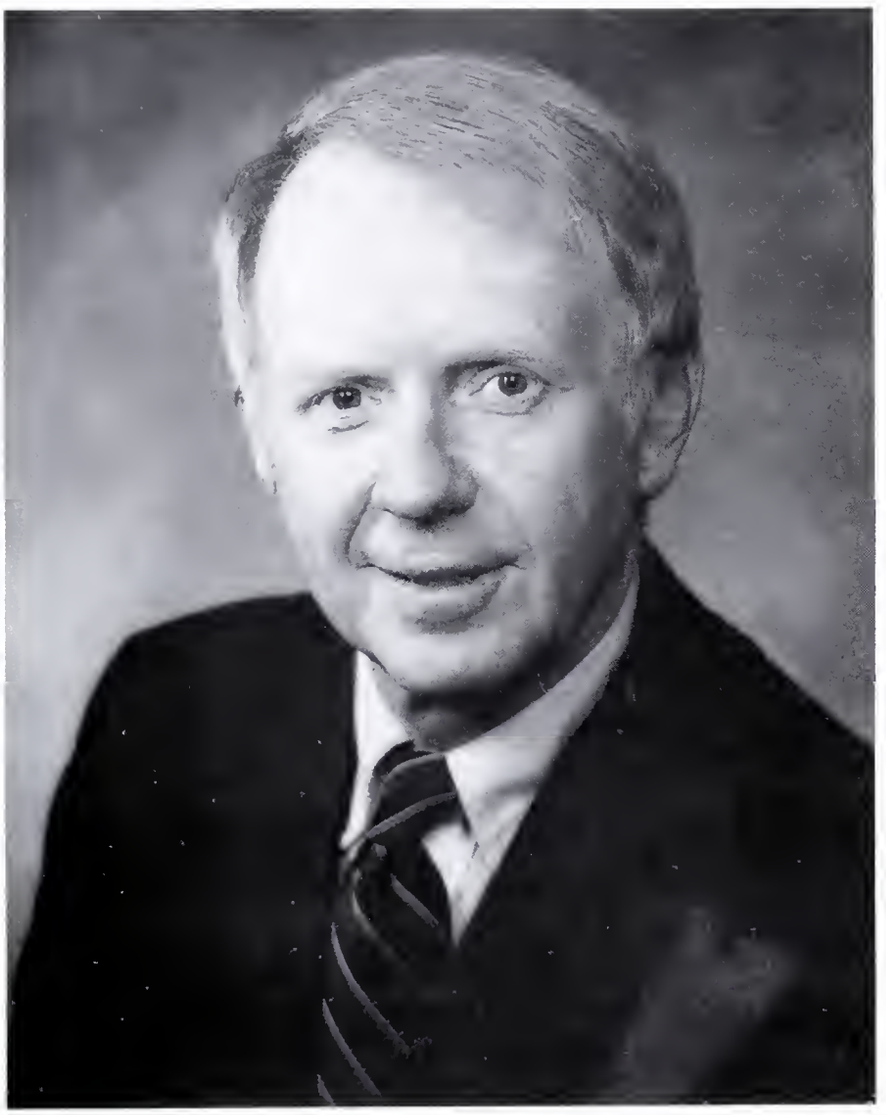
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"THE PERIOD. It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to Heaven, we were all going direct the other way—in short, the period was so far like the present period, that some of its noisiest authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only."

Many of you may be very familiar with these lines. To those of you who are not, lest you attribute to me literary talent which, unfortunately, I do not possess, these are the opening lines to Charles Dicken's immortal "A Tale of Two Cities". They refer to a time of rapid change; a time of unrest, turmoil, uncertainty, and anxiety. It is a time of making new and more expedient alliances of re-examining old alliances, of questioning traditional values, and of "looking out for number one". The period to which Dickens was referring was the French Revolution. But are his words not just as appropriate in describing the present condition of the health care industry? The advances in medicine, technological and otherwise, over the past few decades have been phenomenal. At the same time, we find that a steadily increasing number of people are unable to avail themselves of these developments because of the high cost of medical care.

How did we arrive at the particular position in which we find ourselves in 1985? *Access* to medical care has been conceived as a problem in these United States since time immemorial. At the Federal level, it was conceived as a problem in health manpower shortage and maldistribution and in lack of sufficient health care institutions.[1] Correcting these inequities became the main thrust of Federal health policy beginning in the 1950's but escalating in the 1960's and 1970's. Hill-Burton hospitals abounded. Medicare and Medicaid were initiated in 1965. Unfortunately, no consideration was given to a comprehensive approach to *financing* health care or to the development of a long-range plan concerning the supply and need for health manpower. Consequently, in the 1980's the public and private sector are preoccupied with 1) cost containment, and 2) impending physician surplus.[2] As a result, we are at risk of ignoring issues of equity and quality in health care. Health care expenditures rose from 5% of the gross national product in 1960 to 11% in 1983. Medicare, which cost 3.4 billion dollars in its first full year, rose to 50.9 billion in 1982. Private insurance carriers provided patients with no incentives to restrain their own health care expenditures. Health care packages became an integral part of the contracts between labor and management. This has become an increasingly heavy burden on the business world. This was recently illustrated by the disclosure that at Chrysler Corporation $2.74 per hour of the worker's fringe benefits goes for private health insurance. Health care costs exceeded dividends. Lest we be too critical, keep in mind that many of these programs were formulated in the period prior to 1965 when American productivity was growing at a rate of slightly above 3% a year.[3] But an economic slowdown did occur and the United States is having to come to grips with the problem of equitable distribution of health care in the presence of limited funds. Add to this the mandate for budget cuts and the problem is compounded. It was projected that the 1986 Federal budget would be one *trillion* dollars. Twenty-nine percent of this would go to defense, 20% would be paid out in Social Security cash benefits, and 15% would go for the interest payment on the national debt. This would leave Congress 35% or 350 billion dollars for all other programs. Out of that 350 billion, they were to achieve $50 billion in budget cuts.[4] As it turned out, the actual budget was $973.7 billion with the largest reduction in health spending being in the Medicare program.

Any attempt to solve these multi-faceted problems must take into account budgetary and social factors, and disagreement abounds—even to the question as to whether or not a problem exists at all. Is spending more money for health care necessarily bad? The growth of the health care industry has been perceived by some as a natural expansion of a progressive industry and completely consistent with the

of economics. Dr. Samual Hellman of Sloan-Kettering has pointed out that "a quick perusal of the health care industry shows it to be labor intensive, relatively non-polluting, of redeeming social value, and surely meaningful and gratifying to the participants". It is the third largest employer in the United States today, employing some 5 million people. Maybe a re-examination of our priorities is in order. How much should we spend on defense, consumer products, etc.? By way of illustration, the total cost of cancer treatment in 1980 was 13.2 billion dollars. In that same year, approximately 20.4 billion was spent on tobacco products.[5] Some public opinion polls indicate that a majority of Americans do not want budget cuts in health care programs, despite the view that there exists a popular mandate to trim costs. Perhaps, as one writer has suggested, concerns about health care expenditures are due to peculiarly American political incentives to engage in a rhetoric of crisis.[2]

Be that as it may, the result has been a major transformation in the health care industry. We have seen the influx of new advisors and planners. New alliances have been formed. Old alliances have come under close scrutiny—some modified; some dissolved. Roles have changed. There is a new breed of health care executives with management styles, concerns, and methods that would seem alien to their predecessors. They are the proponents of what has been called "Bottom Line Health Care",[2] otherwise known as "The Market Approach". It is their belief that medicine should be managed *strictly* as a business and that *competition* will control the fiscal problems now faced by the industry. They speak of the "Monetarization of Health Care".[6] Where does the physician find himself in the midst of all of this? On the one hand, he is fighting to retain some degree of autonomy and independence. On the other hand, he is pitted against his fellow physicians for a share of the health care market—a market which is being progressively diluted by the physician glut. The number of practicing physicians has increased by 1/3 over the past ten years, and will increase by the same amount over the next ten years. Physicians are beginning to talk in terms of "survival" rather than "success". These factors have led to an increasing number of physicians resorting to practices (such as advertising), that would have been inconceivable to them ten years ago. It has led to a migration to organizations, such as HMO's, IPA's, etc., designed to provide security. Competition for consumers is also increasing among the health care institutions and among growing numbers of multi-hospital systems and health care conglomerates. As a result, the entire range of human service organizations is becoming more self-centered and concerned with individual survival or "protecting the turf".[2] The speed at which this transformation is taking place is alarming. What are some of the potential effects of this move to a "business-oriented" approach to health care? On the positive side, there may be a beneficial effect on the cost-benefit ratio, which in turn, if nothing else, may have an appeasing effect on some of those who are crying the loudest for reform. Unfortunately, it will only be the costs coming down, and not the benefits going up that will affect the ratio. Managers will be better able to quantitate institutional performance since it will be based almost solely on the profit margin. But it is unrealistic to believe that the market approach can be counted on to solve all of the multi-faceted problems, fiscal and otherwise, that face the health care industry. There are many aspects of this approach about which we should be concerned. We should be concerned about the inequities which will inevitably arise between the care provided for the poor and the patients considered good financial risks. We should be concerned about the rationing of care. We should be concerned about the effect on medical research. The leading cause of cancer today *is* mouse abuse—but is not a better mouse. Are promising projects to be abandoned because of a lack of funds? Are potential cures or preventive measures which might in the long run save countless lives, and billions of dollars, to be left undiscovered because research, at this point in time, is not "cost effective?" We should be concerned about the effect on medical education when teaching hospitals are forced to compete in an open market. We should be concerned about the effect on preventive medicine. We should be concerned about the potential for increased litigation. We should be concerned that health care, rather than being an end in itself, will become only a *means* to achieve an end, that end being financial benefits.

But most of all, we should be concerned about the effect on medical ethics and the physician-patient relationship. The traditional physician-patient relationship has been one that is based on *trust*. This dates back some 2,000 years, and has survived because physicians have adhered to a rigid code of

ethics. We as physicians have been granted a wide latitude based on our patients' belief that we have their best interest at heart and that we will balance technical competence and humanitarian concerns to achieve the best possible result. We are perceived as a *caring* profession. This trust has seen some erosion during recent years but, in general, most patients feel that their individual physician has their best interest at heart. The public cannot help but resent the reducing of the value of human health and life to purely economic terms. It will then conceive this trust as being an "empty ideology perpetrated by the medical profession to retain its privileged status".[2] Are we to redefine our standards of care so as to place ourselves within some "fiscally responsible" norm, and, in so doing, rationalize our doing less than our best? Are we to make decisions for economic reasons but then rationalize them as being in the best interest of this particular patient? To this we say a resounding NO! This is not to imply that physicians should *ignore* the escalating costs of medical care. We are at least partly to blame for them and are logically in the best position to do something about them while we still have the option to do so. We are in the position to modify health care expenditures where decisions regarding appropriateness, efficacy, and effectiveness are concerned. Care can be provided in a less expensive setting, such as ambulatory care and outpatient surgery centers. Redundant or useless diagnostic procedures may be deleted. Superfluous treatments may be eliminated. Resolving the medico-legal problems would do away with the need to practice preventive medicine.

The list is long and you've heard them all over and over again. The challenge to balance the demands of quality care against those of reasonable costs is both exciting and mind-boggling. It will require the best efforts of a *united* profession willing to consider new options but resolved not to abandon those features that have made American medicine what it is today. This is not to imply that we can resort to the "good old days when things were simple" policy. Proponents of this approach withdraw into the seclusion of their practice and lament about the "good old days when I was left alone to practice medicine"; "When I simply did not have to fill out three forms for every patient I saw"; "When a PRO was someone who played football or baseball"; "When I simply didn't have to worry about the plaintiff attorney with his infallible retrospectroscope looking over my shoulder"; "When I simply didn't have to worry about CME credits"; "When I simply sent my Tbc. patients to the sanitorium"; "When I simply had nothing to offer the patients with polio, Hodgkin's disease, or valvular heart disease". Clinging tenaciously to past methodologies insulate one from the problems that face us, and may impede the realization of a whole new palatable and potentially very satisfying solution.

As a way of illustration, I would like to wax philosophical for a minute. Since I was born and raised in Lake Village, which is undeniably the cultural hub of the universe, it will come as no surprise to many of you that one of my great loves is classical music. One of my major outlets for this (since the Lake Village Philharmonic has only a limited number of concerts) has been national public radio. Last June, I happened to be listening to a lecture on early choral groups and, in particular, about the boy sopranos, falsettos, etc. The lecturer was a professor from Western Reserve, and during the course of his lecture he would periodically play recordings from different choral groups to illustrate his points. Naturally, the subject of the *castrati* arose. If you haven't already guessed, these were the young men who underwent castration in order to retain their soprano range. The practice apparently originated in Spain and was practiced widely throughout Europe until the late 19th century. In the course of the discussion, he played a recording made in 1904 by the last surviving *castrati*. This was his rendition of Gounod's *Ave Maria*. Taking into account that recording was in its infancy, that the recording itself was eighty years old, and that tastes in music and arrangement at that time differed somewhat from ours today, the singular effect was not unlike that obtained by scratching your fingernail on a blackboard. In his remarks, the professor noted that the *castrati* had "put his whole heart in it". It was painfully apparent for even the most untrained ear that his heart was not what was lacking. It occurred to me at this point that this was a classical example of resorting to extreme measures to retain some characteristics of the past when future growth and developments might hold new, and certainly more gratifying, rewards. Incidentally, the last *castrati* died in 1922, and thousands of choirboys heaved a collective sigh of relief.

As in any period of rapid change, a whole new vocabulary develops. Actually, not all of it is new.

words just give new meaning to old expressions. You may recall a few years back that a new style in women's apparel called "hot pants" gave a wholly different and socially acceptable designation to an old expression. Today we speak of the "monetarization of medicine",[6] of gatekeepers, of outliers and the physician glut. We have DRG's, HMO's, EPO's and IPA's. Patients have become "consumers" or "customers". Physicians have become "providers". I must admit to feeling considerable resentment to the depersonalization I felt implied by being designated merely as a provider of services. There is one term which we are seeing with increasing frequency, however, and which we should fight to retain at all costs. That title is *patient advocate.*

With the erosion of trust I mentioned earlier, we have heard it said time and time again that patients dislike organized medicine as a whole but still admire and trust their individual physician. They perceive organized medicine's role as looking out solely for the doctor's interest; whereas, the individual physician is looking out for the interest of the patient. How often have we seen a legislator turn a deaf ear to a representative of the Medical Society, yet listen intently and react favorably to input from his personal physician. To the individual patient, his physician has always been his advocate. But in order to be effective at the level dictated by the present situation, it takes the *organized* effort of all physicians working with a concerted effort at all levels of endeavor. In order to fulfill this commission, we must be willing to approach it with an open and analytical mind. For a group noted for being proud, self-assured and, yes, opinionated, this may not always be easy. We have a tendency to feel that our priorities should be shared by others—that what is important to us should be equally important to others. A few months ago, while having dinner with my family in a restaurant, the subject of this evening's activities arose. I was stressing the importance of this evening and telling my children that they would have the opportunity of hearing their daddy give a speech. Whereupon my son, John, said "if it's all the same, couldn't you just get us a baby-sitter and let us watch TV in the room"? Well! I handled that situation in the manner in which any self-assured, mature adult might—I raced home tearfully, leaped into bed, assumed the prenatal position, and turned the electric blanket up to nine.

We can neither react in a knee-jerk manner of rejection to any proposed solution because it came from sources outside our ranks, nor can we be panicked into embracing with open arms, under the guise of expediency and security, the first solution presented to us without consideration of its effect on our patients and our fellow physicians. Cool heads must prevail.

Obviously, our best intentions toward an equitable distribution of health care must be tempered with economic reality for the physicians as well as the patient. If appropriate health care is to survive, the individual physician must survive—both professionally and economically. You will recall, I began this discussion with the opening lines from "A Tale of Two Cities". On paper it sounds great to utilize the closing lines of the same book, and I quote, "tis a far, far better thing I do than I've ever done before". Keep in mind, however, that these are the words of a man in chains, riding in the back of an oxcart, on his way to the guillotine, with thousands of blood thirsty citizens lining the streets screaming for his head. In all probability, even our strongest of critics would not demand that degree of *sacrifice.* But we cannot allow our patients to be viewed merely as sources of figures for fiscal calculations. I recall once hearing a parody of Rudyard Kipling's poem, "If", which went as follows: "If you can keep your head when those about you are losing theirs, you'll be taller than they are". This was meant to be a joke, but there is a message there. If we physicians, both individually and collectively, can keep our head in the midst of this frenzy about us; if we do not succumb to the pressure of "expediency" to do less than our best for our patients and our profession; if we can stand tall so that we are seen by our patients as a sign of stability in an otherwise unstable time, then we will be their assuror of quality, their grantor of equity, their advocate, their doctor.

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PROCEEDINGS

109th Annual Session

ARKANSAS MEDICAL SOCIETY

Hot Springs

April 18-21, 1985

FIRST SESSION
HOUSE OF DELEGATES
April 18, 1985

Speaker of the House Amail Chudy called the House of Delegates to order at 10:05 a.m. on Thursday, April 18, at the 109th annual meeting of the Arkansas Medical Society. He called upon W. Payton Kolb to give the invocation.

Members of the Society seated as delegates and officers present at the meeting of the House were: ARKANSAS, G. L. Guyer; BAXTER, Robert Baker; BENTON, Robert Holder and John Moose; BOONE, H. V. Kirby; BRADLEY, W. C. Whaley; CARROLL, Oliver Wallace; CLARK, Patrick L. Weber; CLEBURNE, Thomas L. Eans; COLUMBIA, John Ruff; CRAIGHEAD-POINSETT, James Robinette, James Sanders, Michael Tedder and Michael Mackey; CRAWFORD, Millard C. Edds; DREW, Andrew David; GARLAND, Richard Gardial, William R. Mashburn and Brenda Powell; GREENE-CLAY, J. Darrell Bonner; JACKSON, Ramon E. Lopez; JEFFERSON, John Crenshaw, L. A. Forestiere, George Roberson and T. E. Townsend; LAWRENCE, Ralph Joseph; LOGAN, Sanford E. Hutson; MEDICAL STUDENT, Lance Lincoln; MILLER, Paul Meredith; MISSISSIPPI, Clint G. Melton; MONROE, N. C. David; OUACHITA, R. H. Nunnally; PHILLIPS, Robert Miller; POLK, David D. Fried; POPE, Frank Lawrence; PULASKI, David Barclay, Paul Cornell, Charles Crocker, Warren Douglas, William Golden, Edwin Hankins, Fred Henker, Marvin Leibovich, Jerry Mann, William Morton, Reid Henry, Ray Biondo, Mayne Parker, Jerry Holton, Thomas Bruce, Robert Shannon and James McDonald; SALINE, Marvin Kirk; SEBASTIAN, A. C. Bradford, McDonald Poe, Jr., Morton C. Wilson and David Busby; TRI-COUNTY, Michael Moody; UNION, Raymond N. Bowman and Wayne G. Elliott; VAN BUREN, John A. Hall; WASHINGTON, Timothy Moritz, Lee Parker, Jr., David Rogers and James Sharp; WHITE, Daniel S. Davidson; YELL, James L. Maupin; COUNCILORS, Merrill J. Osborne, J. Larry Lawson, Jim E. Lytle, John E. Bell, John Hestir, L. J. Pat Bell, Paul A. Wallick, George Warren, Cal R. Sanders, F. E. Joyce, James D. Armstrong, Ronald J. Bracken, W. Ray Jouett, William N. Jones, Frank E. Morgan, Harold D. Purdy, Charles W. Logan, Richard N. Pearson, Robert H. Langston, W. P. Phillips and Ken Lilly; PRESIDENT, Charles F. Wilkins, Jr.; PRESIDENT-ELECT, John P. Burge; FIRST VICE-PRESIDENT, Charles H. Rodgers; SPEAKER OF THE HOUSE, Amail Chudy; VICE SPEAKER OF THE HOUSE, Sybil R. Hart; SECRETARY, James R. Weber; TREASURER, James M. Kolb, Jr.; and PAST PRESIDENTS, Joe Verser, C. R. Ellis, Ross Fowler, Robert Watson, Ben N. Saltzman, A. S. Koenig, Jr., W. Payton Kolb, A. E. Andrews, Kemal Kutait and Asa A. Crow.

Vice Speaker Hart called on Mrs. Mylie Durham of Houston, Texas, the secretary of the American Medical Association Auxiliary. Mrs. Durham addressed the House concerning the challenges facing the physicians and their families. She expressed appreciation of the work being done by

the Auxiliary in Arkansas. Mrs. Durham emphasized that the Auxiliary was dedicated to serving the medical profession.

Speaker Chudy recognized Mrs. Frank E. Morgan of North Little Rock, the president-elect of the Southern Medical Association Auxiliary. Mrs. Morgan outlined benefits of the Southern Medical Association and its Auxiliary. She encouraged members to attend the SMA meeting in Orlando, Florida, November 17-20, 1985, and invited members to stop by the SMA booth in the exhibit hall for more information.

Vice Speaker Hart called on Mrs. Deno Pappas of Hot Springs, president of the Arkansas Medical Society Auxiliary. Mrs. Pappas reported briefly on the accomplishments of the State Auxiliary and county auxiliaries during the past year. She stressed the importance of Auxilians being informed on issues and acting to insure that medicine's voice is heard along with those of others. She expressed the opinion that Auxilians must support and help physicians and their families withstand the pressures that result from all these changes. She expressed appreciation to members of the Medical Society for affording her the opportunity to participate in the Public Relations and Annual Session Committees and to attend the Council meetings during the year.

Speaker Chudy introduced Mrs. Jerry Blaylock of Jonesboro, president-elect of the Auxiliary. Mrs. Blaylock reported on the current membership of the Auxiliary and stressed involvement by physician spouses. She announced that the theme for the Auxiliary the coming year will be "Harmonies for Health;" since it is so important, more than ever, that medicine present a strong voice in America and in Arkansas, the Auxiliary will continue to give harmonious support.

Speaker Chudy gave special recognition to Kelsy Caplinger of Little Rock, who was named one of the winners of the 1985 President's Volunteer Action Awards. Dr. Caplinger is the only physician to ever receive such an award. He was one of fifteen individuals to be chosen from over 1,800 nominees in ten categories. Dr. Caplinger received the award at a White House luncheon on April 22. He was honored primarily for his work with Med Camps.

Speaker Chudy announced that R. Jerry Mann of Little Rock would replace Dr. Caplinger on Reference Committee Number One.

Speaker Chudy recognized the president of the Society for an address to the House.

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PRESIDENT'S ADDRESS

Charles F. Wilkins, Jr.

Mr. Speaker, members of the House of Delegates, honored guests, ladies and gentlemen. In this, my next to the last official action as your president, I present a summary of the state of your Society.

I think we are in good shape!

A year ago I emphasized that my program would be the promotion of unity. In many ways this has been accomplished.

In the political arena our decision to finance the activities of the Legislative Committee has been an outstanding success. Over 60 bills which affected medicine were introduced. With one or two exceptions we either prevailed or were able to negate the effect of the bill.

A great debt of gratitude is owed to James Weber of Jacksonville, chairman of the Legislative Committee. On busy days Jim would often spend the whole day at the Capitol, then return to his office to see patients until near midnight. He received a great deal of assistance from the members of his committee, the legislative contact doctors throughout the State and the "Doctors of the Day" who manned the Elvin Shuffield Infirmary at the Capitol.

Mr. Ken LaMastus, of our executive staff, and Mr. Mike Mitchell, our legal counselor, have proved themselves to be outstanding lobbyists. They have established a reputation for credibility and honesty that has won us many friends, both within the Legislature and administration and with other lobbying groups. Please join me in recognizing their efforts.

In my inaugural address I renamed the Four Horsemen of the Apocalypse — Avarice, Apathy, Anempathy and Arrogance.

The outstanding support of the voluntary fee freeze by Arkansas physicians has allayed our fear of avarice for the time being. The over supply of doctors and specter of competition have reduced the arrogance of the medical profession. Anempathy will perhaps be reduced by the resurgence of the primary care physician, but apathy remains a problem. We *must* unify and work for the common good. We must develop health delivery systems that make available high quality





The members of the House of Delegates met on Thursday, April 18, and Sunday, April 21, to consider the various items of business of the Society.



A. E. Andrews, delegate to the American Medical Association, introduced the representative of the AMA attending the Society's convention, James E. Davis of Durham, North Carolina, Speaker of the House of Delegates of AMA.



Charles H. Rodgers, chairman of Reference Committee #2, presides at open hearing of the committee.



The members of the House of Delegates considered many serious issues during the convention.



Thomas A. Bruce, Dean of the University of Arkansas College of Medicine, expresses appreciation for grants received from the American Medical Association Education and Research Foundation.

at a reasonable price. We cannot depend on third parties, especially governmental agencies, to do this for us. We must lead the way. I am convinced that having destroyed an adequate medical care delivery system for the elderly by introducing Medicare, the Federal Government is now trying to *abandon* the substitute, Medicare, by over regulation and reduction in financial support. It is my strong opinion that medical care for the aged will be our number one problem during the coming decade.

Our number two problem is the resurgence of charlatanism, both without and with the medical profession! If there was ever an argument for a strong Medical Society these two items are enough.

We must be unified.

During the past year your Society's Building Committee has worked hard. The steps necessary for the movement of the headquarters to the center of the State have been progressing. An active office is open in Little Rock. A permanent site has been purchased at the junction of I-430 and Markham Street, and the preliminary design work for a beautiful building has been done.

Your Budget Committee has been working hard to get a grip on the financial problems that will arise from the move. It is obvious that a substantial increase in dues will be required. I think we will get our money's worth! Each of you should review the data carefully as the proposed budget is presented. Feel free to question, but do so in a constructive air of unity and not deviceness!

We have another very important problem! Cliff Long has indicated his intention to retire. To me, this represents the passage of an era. Few men have served any organization as Cliff has this Society. He has served this Society in virtually every possible capacity. His wisdom, even disposition and total honesty will be difficult to match. I have a great personal feeling in this, because he is the person who convinced me that I should work within the Society. I have asked John Hestir of DeWitt to serve as chairman of the Search Committee for a new executive vice president.

On many occasions I hear lamentations as to the future of medicine. Don't you believe it. Yes, things are going to change—not necessarily for the better, but so long as we continue with Selflessness, Empathy, Charity, Humility, Integrity, and Search for Truth—no political, social, economic or religious force *has ever* or *will ever* control medicine.

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Vice Speaker Hart recognized Dr. Wilkins for a presentation. Dr. Wilkins asked Thomas Bruce, Dean of the College of Medicine at the University of Arkansas, to join him at the podium. Dr. Wilkins presented two grants to Dr. Bruce from the American Medical Association Education and Research Fund. One grant in the amount of $16,857.79 is unrestricted funds intended for the pursuit of excellence in the medical school's program and the second for $2,474.08 is restricted to use in the school's program of financial assistance for medical students. Dr. Wilkins praised the Auxiliary for its work on behalf of AMA-ERF.

Dean Bruce presented a copy of a book published by the College of Medicine about its last ten years, "Improving Rural Health Care—Initiatives of an Academic Medical Center", to the members of the Arkansas Medical Society Auxiliary with sincere thanks for the help of the Auxiliary in raising AMA-ERF funds to help build a great medical school and to help provide preferred medical care for the citizens of the State of Arkansas. A past president of the Auxiliary, Mrs. Charles Wilkins, accepted the book on behalf of the Auxiliary.

Chairman of the Arkansas Medical Society Political Action Committee, John Hestir of DeWitt, addressed the House of Delegates on the Political Action Committee. He stressed the importance of contributions to PAC in non-election years as well as election years; monies received in non-election years are used as a base for educational activities and for campaign contributions during election years.

Vice Speaker Hart called for discussion of the minutes of the 108th Annual Meeting as published in the June 1984 issue of the Society Journal. Upon motion of Lilly, the House voted approval of the minutes as published.

The minutes of the 1984 winter meeting of the House of Delegates were approved as distributed, upon motion of Bruce.

Speaker Chudy recognized the chairman of the Council, J. Larry Lawson, for a report on actions of the Council. Members of the House were advised that the report of the Council as published in the March issue of the Journal, and the report covering the February 10th meeting which had

been distributed, would be referred to Reference Committee #2. Dr. Lawson presented the following report from the Council orally:

* * * *

REPORT FROM THE COUNCIL

The Council voted at its meeting today (April 18) to recommend to the House of Delegates that a $100 dues increase be implemented beginning with the calendar year 1986.

* * * *

This second supplemental report of the Council was also referred to Reference Committee #2.

Speaker Chudy reminded members that committee reports which were not published were distributed with the House agenda. The reports include:

Constitutional Revision Committee
Mental Health Committee
Impaired Physicians Committee

The Mental Health Committee Report and the Report of the Impaired Physicians Committee were referred to reference committee without discussion.

A. S. Koenig, chairman of the Constitutional Revisions Committee, read proposed amendments for initial consideration by the House.

Bylaws, Chapter V, Election of Officers. Section 1. Nominating Committee.

Delete: (A) Prior to adjournment of the first meeting of the House of Delegates at each Annual Session, the delegates from the component societies of each councilor district shall meet, the councilor not subject to re-election acting as chairman, and select one delegate from each district to form a committee on nominations. This committee shall consist of ten delegates, one from each councilor district. It shall meet and organize by selecting a chairman and a secretary.

Substitute: (A) The Nominating Committee shall consist of ten members of the House of Delegates, one from each councilor district. Each member of the committee shall serve for a term of two years, the terms being staggered so that odd and even numbered councilor district representatives shall be replaced on alternate years. In the first year following adoption of this amendment, the odd numbered councilor district appointees shall serve for one year, the even numbered councilor district appointees shall serve for two years. The names of the delegates appointed to the nominating committee shall be submitted by the senior councilors in the districts to the executive vice president no later than thirty days prior to the annual meeting. Following the first meeting of the House of Delegates at the Annual Session, the nominating committee shall meet and organize by selecting a chairman and a secretary.

The following portion of the present Section (A) would remain unchanged:

It shall be the duty of this committee to consult with members of the Society and to hold one or more meetings at which time the best interest of the Society and of the profession of the State for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the headquarters office no later than February 1 in the shape of a ticket containing the names of two or more members for the office of president-elect and of one member for each of the other offices to be filled at the Annual Session. No two candidates for president-elect shall be named from the same county.

The recommendations of the Constitutional Revisions Committee were referred to Reference Committee #3 for consideration.

Speaker Chudy recognized the chairman of the Committee on Medical Legislation, James Weber. Dr. Weber briefly addressed the House on activities of his committee. A report from the committee appears elsewhere in the convention proceedings section of this Journal.

Speaker Chudy called a brief recess of the House for election of members to the 1985-86 Nominating Committee. Members were asked to report names to Miss Richmond of the Society staff as soon as selection was made.

Speaker Chudy reconvened the House and asked Miss Richmond to read the names reported to her; those appointed were:

FIRST DISTRICT—James Robinette, Jonesboro
SECOND DISTRICT—Ramon Lopez, Newport
THIRD DISTRICT—John Hestir, DeWitt
FOURTH DISTRICT—Paul Wallick, Monticello
FIFTH DISTRICT—John Ruff, Magnolia
SIXTH DISTRICT—James Armstrong, Ashdown

SEVENTH DISTRICT—Richard Gardial, Hot Springs
EIGHTH DISTRICT—Frank Morgan, North Little Rock
NINTH DISTRICT—Lee Parker, Jr., Fayetteville
TENTH DISTRICT—W. P. Phillips, Fort Smith

The House of Delegates recessed until Sunday morning, April 21, 1985.

SUPPLEMENT TO MINUTES OF THE APRIL 18, 1985, SESSION OF THE HOUSE OF DELEGATES

MINUTES OF THE 1984 WINTER MEETING OF THE HOUSE OF DELEGATES

The 1984 winter meeting of the Arkansas Medical Society House of Delegates met at the Camelot Hotel in Little Rock on December 16. Speaker of the House Amail Chudy called the meeting to order at 2:15 p.m.

Those in attendance were: DELEGATES—ARKANSAS, G. L. Guyer; BAXTER, John F. Guenthner; BENTON, Jan Turley, Carl Hoffman; BOONE, Rhys Williams; CARROLL, Oliver Wallace; CLARK, N. R. Ritter; CLEBURNE, Thomas L. Eans; CRITTENDEN, Milton Deneke; DALLAS, Don G. Howard; FAULKNER, Bob Benafield; GARLAND, J. Richard Gardial, Eugene Shelby; GREENE-CLAY, J. Darrell Bonner; HEMPSTEAD, James W. Branch, Sr.; JACKSON, Ramon Lopez; LEE, Dwight W. Gray; MISSISSIPPI, Clint Melton; PHILLIPS, Robert Miller; POLK, David D. Fried; POPE, Kelly Meyer; PULASKI, Edgar Easley, Robert F. Shannon, Kelsy J. Caplinger, John M. Smith, Harry Ward, C. Reid Henry, Warren Douglas, Fred O. Henker, III, Carlos A. Araoz, Jerry C. Holton, Warren C. Boop, Jerry Mann, Charles H. Crocker, David L. Barclay, J. Mayne Parker, Douglas E. Young, Paul J. Cornell, Marvin Leibovich, Thomas Bruce, Bruce Schratz; SEBASTIAN, Morton C. Wilson, David Busby, Robert Fisher; TRI-COUNTY, Michael Moody; UNION, Willis M. Stevens; VAN BUREN, John A. Hall; WASHINGTON, Trish Blair, Charles Sisco, David Rogers; YELL, James L. Maupin; MEDICAL STUDENT, Mr. Lance Wilson; COUNCILORS—Merrill J. Osborne, J. Larry Lawson, Jim E. Lytle, John E. Bell, John Hestir, L. J. P. Bell, Lloyd G. Langston, Paul A. Wallick, George Warren, Cal R. Sanders, James D. Armstrong, E. K. Clardy, Ronald J. Bracken, William N. Jones, Frank E. Morgan, Charles W. Logan, Richard N. Pearson, Robert H. Langston, W. P. Phillips, Ken Lilly; PRESIDENT, Charles F. Wilkins, Jr.; PRESIDENT-ELECT, John P. Burge; FIRST VICE PRESIDENT, Charles H. Rodgers; SPEAKER OF THE HOUSE, Amail Chudy; VICE SPEAKER OF THE HOUSE, Sybil R. Hart; SECRETARY, James R. Weber; TREASURER, James M. Kolb, Jr.; PAST PRESIDENTS—Joe Verser, Joseph Norton, Ross Fowler, Ben N. Saltzman, T. E. Townsend, W. Payton Kolb, A. E. Andrews, Kemal Kutait, Purcell Smith, Jr., Morriss M. Henry and Asa A. Crow.

Speaker Chudy recognized Lloyd Langston, Chairman of the Building Committee. Dr. Langston made the following report:

During the 1984 annual session, the House of Delegates instructed the Council of the Medical Society to move the Society's headquarters office to the Little Rock area and to proceed with plans to construct an office building to house the Arkansas Medical Society. According to those instructions, the Council approved the formation of the Arkansas Medical Society Building Committee consisting of me as chairman, Joe Norton, Charles Logan, Larry Lawson, and Charles Wilkins. Cliff Long and Mr. Ken LaMastus have worked actively with us since the formation of this committee. Since the committee was appointed in May, we have accomplished the following with the approval of the Council:

1. Interviewed several potential developers and selected John Flake and Company to oversee the project.
2. Interviewed numerous potential architects—I believe six or seven different firms—and selected the firm of Blass, Chilcote, Carter, Lanford and Wilcox to design and assist with the construction of the project.
3. Developed a construction budget projecting the cost of the building, rent, lease, etc.
4. Purchased Lot #2 of the Corporate Hill Development which is out near West Markham and I-430 at a cost of $327,571. This was done after a review of about nineteen different sites and several meetings to narrow this down.
5. Recommended to the Council a $100 single-time assessment to assist with covering the expenditure of this land.

6. Approved a tentative building design, site plan and exterior materials. The building will have approximately a 30,000 net square foot area of which the Society will initially utilize 7,000 to 8,000 square feet.

The architects will be outside the meeting hall following the adjournment of this House of Delegates and will have information concerning this.

If you are interested, they will have a scale model of the building, photographs, site pictures and other things that might be of interest. We have hired a contractor, Kinco Construction Company, to work with the architects and developer in developing the building.

Finally, we have engaged Mr. Tom Overbey, a special legal consultant, to assist in the tax planning, tax advice and to develop a financial plan to complete the project.

This basically summarizes the activities of our committee. I would like to present at this time Mr. Rett Tucker who is with Flake and Company who will go through the financial background of the building, the projected budget, etc. I hope that you will listen to this very intently. We are going to be anxious to find out what the level of interest is in being a part of this project among the membership in the House of Delegates later. Following his presentation, Tom Overbey will present to the House of Delegates the general concept for financing this building; he can give you his ideas and what we feel is probably the best way to proceed at this point.

Mr. Tucker distributed information packets to members of the House. He complimented the Building Committee on the outstanding job they have done. He indicated they had been very flexible but diligent in protecting the Society's best interests. Mr. Tucker made the following report on activities to date:

After seven or eight meetings and several months of work, we have come to this point. The first page on the handout is a development budget; I'll just give a few highlights on it for you. Dr. Langston mentioned that you are paying $327,571 for the property. That is $3.20 per square foot. Other property in that general area in Little Rock (which many of you know is the highest growth area in the city, if not in the State) is selling in the $5 per square foot range. Recently a transaction was completed at I-630 and Shackleford for $12 per square foot for about a seven-acre tract. So your purchase at $3.20 is a good one. The second major item of the budget is the construction cost of $41 per square foot which includes building the shell of the building, all of your site improvements, all of your paving and any landscaping that you might want to bring to the project. The "tenant finish" is comparable to others being offered in the market and that is what is being given to each new lessee to finish out his space. If, for example, they want to build the Taj Mahal for themselves, $10.50 probably would not cover it but the project would not be responsible for it. Those are the major items of the development budget.

The second page is a projection of the first year's operating statement for the project. You can see that we've suggested giving a slight break to the Society for their 8,000 feet of $13.25 and lease the other space for $13.50 per square foot. We believe this is well within the market and is, in fact, some $2 under the lease rate being charged by what we believe will be the building's prime competitor, Three Financial Centre, the new eight-story building going up across Hermitage from Financial One and Two.

The rent in that building began at $15.50 a foot and ranges up above $17 so we feel like $13 is very competitive. We have used our experience and those of other building managers in projecting the expenses; these are quite comparable to other suburban office buildings. In figuring the debt service, we used 13.5 percent which at this time is the highest rate allowed by law in the State of Arkansas. We've got some indications that we can do better than that but for purposes of making a projection, we wanted to be conservative. In fact, it will please you to hear that six financial institutions have already made a commitment to bid on the project. This is most encouraging to those of us that have worked on it. They include the two biggest banks in the State (Worthen and First Commercial), First Federal Savings and Loan, two other banks and one other savings and loan association. So, from those six proposals, I'm sure we can get a very attractive package. Let me stop here and say that through the help of Tom Overbey, what has been decided is that the Society will own the land and will lease it to a limited partnership comprised of members of

THE HOUSE OF DELEGATES



Amail Chudy, North Little Rock, Speaker of the House of Delegates of the Society.



Sybil Hart of Blytheville, Vice Speaker of the House of Delegates of the Society.



Mrs. Deno Pappas, 1984-85 president of the Arkansas Medical Society Auxiliary.



Mrs. Jerry Blaylock of Jonesboro, 1985-86 president of the State Auxiliary.



Mrs. Frank E. Morgan, North Little Rock, president-elect of the Southern Medical Association Auxiliary.



Mrs. Mylie Durham, Secretary of the American Medical Association Auxiliary.



John Hestir, chairman of the Arkansas Medical Society Political Action committee.



President Charles Wilkins makes his "President's Address" to the House of Delegates.

THE HOUSE OF DELEGATES



J. Larry Lawson of Paragould, Chairman of the Council of the Arkansas Medical Society, presiding at meeting of the Council.



Dr. and Mrs. John P. Burge of Lake Village, Dr. Burge is the 1985-86 president of the Arkansas Medical Society.



James E. Davis, Durham, North Carolina, Speaker of the House of Delegates of the American Medical Association, addressing members of the House.



Dr. and Mrs. Ken Lilly of Fort Smith. Dr. Lilly is president-elect of the Arkansas Medical Society.

AROUND THE CONVENTION



Millard Edds of Van Buren visits the technical exhibits during the convention.



Paul Ellwood, president of Interstudy, speaks at the socioeconomic conference.



Darrell Bonner of Paragould views one of the displays in the exhibit area. Dr. Bonner served as chairman of the scientific exhibits for the meeting.



Charles Rodgers, First Vice President of the Society, presides at the socioeconomic conference on Thursday of the convention.



Ken Lilly of Fort Smith is escorted to the podium by Kemal Kutait and Ben Saltzman after being named president-elect of the Society.



Ken Lilly addresses the House of Delegates as the new president-elect of the Society.



PRINCIPAL OFFICERS OF THE ARKANSAS MEDICAL SOCIETY FOR 1985-86

(Left to right) James Weber, Jacksonville, secretary; Larry Lawson, Paragould, Chairman of the Council; Ken Lilly, Fort Smith, president-elect; John P. Burge, Lake Village, president; Charles F. Wilkins, Jr., Russellville, Immediate Past President; James M. Kolb, Jr., Russellville, Treasurer.



THE COUNCIL OF THE ARKANSAS MEDICAL SOCIETY, 1985-86

Front row, left to right: Past President C. R. Ellis, Councilor Cal Sanders, Secretary James Weber, Chairman of the Council Larry Lawson, President-elect Ken Lilly, President John P. Burge, Immediate Past President Charles Wilkins, Treasurer James M. Kolb, Jr. Second row, left to right, Past President Joe Norton, Councilors Robert Langston, John Hestir, Merrill Osborne, Ronald Bracken, Charles Logan, First Vice President Milton Deneke, Speaker of the House Amail Chudy. Top two rows, left to right: Councilors Jim Lytle, James Armstrong, Harold Purdy, E. K. Clardy, George Warren, Frank Morgan, John Bell, Morton Wilson, Paul Wallick, Past President Ben Saltzman, Councilor William N. Jones (Charles Rodgers) Past President A. S. Koenig, Jr., and Vice Speaker of the House Sybil Hart.



Past Presidents of the Arkansas Medical Society attending the luncheon on April 19th were Stanley Applegate, Kemal Kutait, A. S. Koenig, Jr., H. W. Thomas, Charles Wilkins, A. E. Andrews, C. R. Ellis, and W. Payton Kolb.



Members of the Fifty Year Club attending the club luncheon during the convention were C W. Anderson, Robert Watson, Kenneth Seifert, Frank Burton, Jim McKenzie, John Greutter, Edwin Gray, Ross Fowler, James W. Branch, James Burnett, Gilbert Dean, John McCollough Smith, Edgar Easley, John Walter Jones, and H. V. Kirby.



The receiving line for the Council reception on Friday evening (right to left) Chairman of the Council J. Larry Lawson and Mrs. Lawson, President Charles Wilkins and Mrs. Wilkins, President-elect John Burge and Mrs. Burge; Secretary James Weber and Mrs. Weber, and Immediate Past President Asa Crow and Mrs. Crow.

the Society. For regulatory reasons, we are trying to limit the number of units in the limited partnership to thirty-five. If you go up above thirty-five, your filing and regulatory requirements become almost burdensome. Mr. Overbey can elaborate on that, but there will be only thirty-five units. The Society will own the land and lease it to the limited partnership which can then deduct the lease payments—that's a tax deductible expense. The owners can then have the appreciation on the building which is, as you know, where the tax benefits are.

The third page is a summary of the cash flow provided by the investment. We are going to raise half a million dollars in these thirty-five units; the units break down to $14,285 apiece. You can see the cash flow over the eighteen years of the land-lease. We arrived at eighteen years for several reasons, but really for one big reason. That is the length of time that you can depreciate the building. Secondly, we tie the land lease into that length of time as well as the financing so at the end of eighteen years the loan on the building will be completely paid off; the lease will mature and all of the depreciation will have been used up. But the cash flow, as you can see, in 1985 through 2002 is a combination of tax benefits and cash flow that will accrue to the investors. Those eighteen figures add up to $1.6 million and that's just on your cash flow. Then it was decided that the Society, at the end of the eighteen-year period, would purchase the building from the partnership for a million two-fifty based on a 20 percent capital gains range. The investors would net one million dollars, which doubles their original investment; so they would be doubling their original investment on the building itself, plus they will enjoy the cash flows over the eighteen-year term of the lease. On a per unit basis, those cash flows break down $45,497, so you are a little more than tripling your money on the cash flow alone and then you are doubling it on the return sale of the building where an individual unit will be worth $28,571. If you invest $14,285 today, over an eighteen-year period, $74,000 would come back to you—roughly, a 5 to 1.

Below the cash flows is a summary of the assumptions we used in making these projections. One thing that I will call to your attention is number 5—the land lease. You see that the first two years, the Society will lease the land to the partnership for only $1 per year. That is an incentive to the investors to get into the project and this will be more than made up to the Society when the building is purchased for a million two-fifty. Our projection is that the building will be worth five to six million dollars in eighteen years as opposed to a million two-fifty. But on the front end, the investors know that they will be doubling their money on the building itself. Those are my comments. I would ask Tom Overbey to elaborate a little bit on why we made some of the decisions we did.

Following are the comments made by Mr. Overbey:

> When we were hired, the two propositions put to us were (1) to figure out a way the potential investors in the building can reap the tax benefits basically because the Society, as an exempt organization, does not need and could not properly utilize the tax deductions and (2) to find a way the Society could end up owning the building at some point in time. After much discussion and analysis, we came to the conclusion that the proposal that Mr. Tucker has discussed was perhaps the best one and that involves this concept: the Society would own the land; it would lease it under a grounds lease to a partnership to be formed composed of persons who invest in the partnership. That partnership would borrow the money to build the building and take the risks for that and leasing the building out. As Mr. Tucker indicated, the basic ground lease term is eighteen years and at the end of that time, and upon payment of a million two hundred and fifty thousand dollars, the building reverts to the Society. The land is a nondepreciable asset and the Society owns it so we separated the tax benefits of the building from the nondepreciable land and within eighteen years the Society has it back. That is the basic concept; there are a lot of details yet to be worked out but that is what we are going forward with in terms of accomplishing this for the Society.

Dr. Langston invited questions from members of the House. He advised members of the House that they should contact the headquarters office if interested in participating in the limited partnership.

Speaker Chudy commended Dr. Langston and committee for their work.

Speaker Chudy recognized Larry Lawson, Chairman of the Council. Dr. Lawson reported that the Council had voted that morning to present three recommendations to the House of Delegates. The recommendations were:

1. That the Executive Committee have authority to make appropriate reductions in out-of-state travel for meetings.
2. That current income be used to pay for land costs for the headquarters building.
3. That a one-time assessment of all Society members of $100 be made to aid specifically the land cost for the Society building.

Speaker Chudy reminded members that a four-fifth vote of the members of the House was required for approval of an assessment. After much discussion, there was a standing vote on proposal #3 for a one-time, $100 per member assessment. The vote was 70 for, 9 against.

The House unanimously approved, by voice vote, proposals #1 and #2 as presented by the Chairman of the Council.

Speaker Chudy recognized Joe Verser, Secretary of the Arkansas State Medical Board. Dr. Verser reviewed licensure fees proposed by the State Legislative Council. The Medical Board had proposed fees of $400 for licensure by reciprocity and examination fee and a $10 registration fee. The Legislative Council voted to set a $25 registration fee and a $250 fee for examination and reciprocity.

Speaker Chudy then called on the Chairman of the Legislative Committee, James Weber, for a report.

Dr. Weber reviewed the following proposals:

1. Mandatory Seat Belt Law. The committee voted to become actively involved in writing the legislation, to promote the legislation in the next session, and to have the legislation applicable for cars (front seat and back seat), pick-up trucks and trucks. The committee recommended that enforcement of such a law should be given special attention.
2. Definition of Death. The Legislative Committee feels the Society should support the legislation.
3. A PPO Law. The committee feels this could be one of the most important pieces of legislation this year pertaining to physicians and the delivery of medical care. The committee feels the bill drafted is excellent.
4. Medical Malpractice. In every session of the Legislature, there are attacks on the State's malpractice law.
5. Act 638. Bills have been drafted to modify Act 638 which placed a limit of eighteen months on collection of accounts. It is felt there will be legislation revising the provisions of the Act.
6. Allied Health Providers. It is not known what will be proposed by allied health providers, but there will undoubtedly be a number of bills drafted in this area.
7. Lay Midwives. The existing lay midwife law needs revision for clarification.
8. Physician-owned Pharmacies. The committee understands legislation will be proposed to make it illegal for a physician to own stock in a pharmacy or a corporation pharmacy. The committee feels such a proposal would probably be unconstitutional.
9. Informed Consent. There was a great deal of concern in the last session of the Legislature on the subject of informed consent. The matter was referred to an interim committee. Informed consent pertains primarily to breast cancer and treatment surgically of all gynecologic problems. The committee does not feel that legislation will be enacted in this regard.

Dr. Weber thanked the members of his committee.

Thomas Bruce, Dean of the University of Arkansas College of Medicine, was recognized by Speaker Chudy. Dr. Bruce reviewed a proposal by the Legislative Council to mandate an increase in the number of medical students accepted at the College of Medicine.

Speaker Chudy called for other business. There being none, the House adjourned at 4:00 p.m.

* * * *

SUPPLEMENTAL REPORT OF THE COUNCIL

J. Larry Lawson, Chairman

The Council met on Sunday, February 10, 1985, in the Camelot Inn in Little Rock and conducted business as follows:

1. Minutes of the December 16, 1984, meeting were presented for approval. The Council voted to amend the minutes as distributed to clarify a reference by the Budget Committee chairman regarding use of Society reserves for operating deficit. The amendment adds to the

minutes the following: For six years, the Society has had to use income from our reserves because dues income was not adequate; in 1984, it was necessary to actually take money out of reserves for a $55,000 deficit and the membership should be aware of this situation as it reflects the need for additional income. The minutes were approved with this amendment by addition.

2. The Council approved actions of the Executive Committee on January 2, 1985, as follows:
 (1) Voted unanimously to send two voting members of the Council to the Leadership Conference in Chicago in February, along with one staff member.
 (2) Discussed the proposed legislation to make the determination of disability as needed for disability license stickers from the private sector and require the determination to be made by the State Health Department. The Executive Committee voted unanimously in opposition to this position.
 (3) Approved the selection of Stanley Bradley of Russellville to replace Ronald E. Guy on the Drug Utilization Review Committee of the Arkansas Medicaid Drug Program.
3. Chairman of the Legislative Committee, James Weber, reported on legislative issues of interest to the Society which are being considered by the Arkansas General Assembly.
4. T. E. Townsend reported on actions of the House of Delegates of the American Medical Association at the December 1984 meeting. He requested that members of the Council be provided with copies of the statement of the Judicial Council of AMA on use of animal organs and mechanical devices to replace failing human organs.
5. Chairman Lloyd Langston reported for the Building Committee. He reviewed the recommended way the building be set up; there would be a general partner with a limited partnership owning the building and the Society leasing the land to the limited partnership with a reversion clause in the limited partnership which would allow the Society to purchase the building at the end of 18 years (depreciation, etc., all completed) for 1.25 million dollars. The projected value of the building at that point would be in excess of five to six million dollars. The only problem encountered in setting up the limited partnership is that of deciding on the general partner. He presented two alternatives considered by the committee. They are: (1) setting up a subsidiary corporation of the Society which would, in essence, be the general partner with a board of trustees responsible for tax forms, etc., (2) making Flake and Company the general partner. He reported that Flake and Company were willing to become the general partner for 3% of the building (which would be taken from the limited partnership funds and payable to them when the property is liquidated; they would have the equity but there would be no cash disbursement until the liquidation). He reported that this would amount to about $37,500 at the end of 18 years. With Flake and Company as the general partner, the Society would have no liability in the building; the Society's land would be subordinated to the building (property would be held with the building in case of financial default until reorganization of the limited partnership or resale; the Society would still receive compensation for the land, perhaps not full return of the investment). The Council voted to allow Flake and Company to be the general partner, with as many controls as possible written into the general partnership agreement. There was one vote in opposition. Dr. Langston also discussed the method of selecting and sale of the units of the limited partnerships for the building. The Council voted to give the Building Committee authority to set up a nondiscriminatory method to determine who will be limited partners.
6. James Armstrong, chairman of the Nominating Committee, reported recommendations from his committee on changes in the selection of members of the Nominating Committee. The proposed change would specify that members of the councilor districts select members of the nominating committee and report their selections to the Council thirty days prior to the annual meeting, with terms staggered initially by naming members in odd-numbered districts to serve one-year terms and making all other terms two years. The Council voted to accept the recommendation of the Nominating Committee for referral to the Constitutional Revision Committee.

The executive vice president reported to the Council that 276 medical students had been enrolled as dues-exempt members. He pointed out that those members would be lost if there were no resident organization for them. He proposed extending the membership solicitation program to interns and residents, indicating that cost would be $5,000 to $10,000 and requested Council guidance. The Council voted approval of the dues-exempt membership solicitation for interns and residents.

8. The executive vice president announced that it was his intent to retire when the office moved from Fort Smith. He referred to the action of the House in April 1981 calling for the appointment of a search committee when vacancies exist in executive positions. He suggested that the Council consider making the search committee also a "transition committee" to provide guidance to the new chief executive in assuming the responsibilities of the position after the selection process has been completed. It was generally agreed that the proposal should be an item for the agenda of the next meeting.
9. Ben N. Saltzman, Director of the State Health Department, spoke on behalf of Society support for publication of a history of the health department. The matter was referred to the Budget Committee for a recommendation to the Council.

REPORT OF THE MENTAL HEALTH COMMITTEE

Aubrey C. Smith, Chairman

Actual work of the Committee on Mental Health for the year of 1984 and the spring of 1985 was relegated to working with the Secretary of the State Medical Society, James Weber, with regard to legislation involving mental health in the State of Arkansas. Two meetings were held with regard to the bill proposed by the social workers mandating payment for direct services to social workers from third-party payers.

Several psychiatrists—including myself, Warren Douglas, Stuart Harris, Payton Kolb—met on two occasions. The first occasion was with members of the Medical Society and the second with representatives from the social workers group to clearly state the Medical Society's position on third-party payment for social workers. It was felt that there was adequate communication with the social workers present, and they clearly understood the position of the Medical Society with regard to social worker competency and physician/psychiatric supervision of medical care for patients.

It was generally understood that our feeling was that the patients should all have physical evaluations done by physicians prior to any psychotherapy experience and that some consultation should go on. In addition to this, we also presented our views regarding proposed Bill #417 to request that insurance companies give the subscribers the opportunity to increase mental health benefits from the present $4,000 to $7,500 per year. Neither bill has come up at this time and we are continuing to be involved in consultation with the Legislature in these matters.

REPORT OF THE IMPAIRED PHYSICIANS COMMITTEE

Aubrey C. Smith, Chairman

The Impaired Physicians Committee was first organized and started in 1983, and charged by the Arkansas Medical Society to deal with the problem of impaired physicians in the State of Arkansas.

The original committee was composed of: A. C. Smith, Chairman; Lee Parker, Jr.; J. L. Martindale; Ray Jouett; Glen Baker; and B. P. Raney.

This committee began working in earnest in June of 1983 and has held several committee meetings over this interim of time with the last meeting being held following Doug Talbott's presentation to the Arkansas Psychiatric Society in October of 1984. Progress of the committee during 1984 included the following:

(A) In February of 1984, the chairman of the committee visited for a full weekend with Dr. Douglas Talbott in Atlanta, Georgia, observing firsthand the treatment process interviewing members of his treatment team, attempting to put together some type of package to disseminate to the committee members for the process of education to the people of Arkansas for the need to deal with the problem of Impaired Physicians. Interesting statistics obtained at that meeting were with the consistency of the number or percentage of impaired physicians, that is, with chemical impairments, to be about ten percent throughout the United States.

(B) The psychiatric impairment among this group of physicians, in Dr. Talbott's series, held at about eight percent of the referred physicians. That is to say that only about eight percent of the total had a primary

psychiatric diagnosis as a factor in their chemical illness, excluding the reaction to depression present in almost 100% of the people who were referred which cleared once the offending chemical was withdrawn. At that meeting, copies of the video tape relating to impaired physicians entitled "It Couldn't Happen to Me" were obtained for distribution to the various committee members.

(C) In July of 1984, C. C. Long was notified to place an announcement in the newsletter that my office number (501-664-0001) would be used for a hotline referral source for impaired physicians. The starting month was October and we would begin to accept calls to send intervenors to deal with physicians presently having problems.

(D) Committee meeting was held August 20, 1984, at which time the Committee approved a referral procedure which was to be (1) referral to the committee chairman; (2) from the committee chairman to the committee member in charge of the State area; (3) to the investigators assigned by the area chairman; (4) confrontation of the impaired physician with intervenors composed of the area chairman and his designates; (5) referral back to the committee chairman regarding the treatment program or his non-acceptance. The physicians on the committee were assigned the following areas: Lee Parker, Northwest Arkansas; B. P. Raney, Southeast Arkansas; Ray Jouett, Southeast Arkansas; Joe Martindale, Southwest Arkansas; and Glen Baker, Central Arkansas.

(E) In October the committee and chairman were privileged to hear a presentation on Impaired Physicians made to the Arkansas Psychiatric Society by Doug Talbott. This was an excellent program illustrating the progress and method used in Georgia for dealing with impaired physicians who had served as a model program for most other impaired physician committees in the United States. The afternoon was spent with Dr. Talbott, committee members, and other interested physicians to question him and to deal with the training of intervenors.

(F) Committee members were asked to begin educational programs regarding edification of various county societies about the committee work, and special mention should be made about the tremendous effort of all committee members, but particularly of Dr. Parker. Also, Dr. Martindale is presenting the film "It Couldn't Happen to Me" and talks to various medical societies. Intervention at this point has been carried on with approximately six physicians resulting in two referrals to various treatment centers. Two are presently still in process and two were felt not to come within the scope of the impaired physician. One of these was felt to be within the province of the State Medical Board.

PROBLEMS PRESENTLY FACING THE IMPAIRED PHYSICIANS COMMITTEE:

(1) Dr. Jouett submitted his letter of resignation on December 28, 1984, feeling that being a member of both the State Medical Board and the Impaired Physicians Committee might represent some conflict of interest. The Society will need to consider replacing this member on the committee. My suggestion would be at this time to choose someone from the Southwest part of the State so that we would have committee representation from that area. I think probably we should also consider having a recovering physician as a member. If a committee member could be chosen with these qualifications, it would be a more viable committee with regard to dealing with the intervening on Impaired Physicians.

(2) The problem of the Arkansas State Medical Board and its relationship with the Arkansas Medical Society and the Medical Society's Committee on Impaired Physicians needs to be addressed by the Medical Society and House of Delegates, particularly to the recommendation that all impaired physicians should be reported to the Board. Although the secretary of the Board has reported that he believes that all impaired physicians should be reported to the Board and does not feel that it is necessary that the committee take any action against the physician, I feel that there is a conflict in the philosophy in that it is my understanding that the Impaired Physicians Committee is to be an advocacy which would hold all communications between the committee and physician in confidence and avoid the notoriety of the hearing by the Board. I would certainly agree with

MEMBERS ENJOYED THE CONVENTION RECEPTIONS










MEMBERS ENJOYED THE CONVENTION RECEPTIONS










MEMBERS ENJOY THE SOCIAL FUNCTIONS AT THE CONVENTION













CANDID PHOTOGRAPHS FROM THE CONVENTION













Dr. Verser that a physician with a chemical problem should not be left in practice. It would be my understanding that these physicians would be referred to the appropriate treatment center and not be left in practice until such time as the treatment center felt that they were ready to return to practice. I would think certainly that in any situation where medical judgment was impaired, that if these physicians did not elect to leave their practices and go into a treatment (inpatient situation) center, that the Board should certainly be notified. It would be our policy, however, to hopefully be dealing with physicians prior to the time that they became a problem and certainly would continue to be followed up by the committee once they returned to private practice.

In my traveling to Georgia and Mississippi, I have found a good working relationship between state medical boards of those states and the Impaired Physician Committees and see no reason why we cannot enjoy the same relationship in Arkansas. I do think, however, that the relationship should be dealt with by the State Medical Society and would want to function under their direction to see how they see it better.

RECOMMENDATIONS: The committee, at this time, has experienced enough in terms of intervention with involved physicians, the amount of time it takes, the amount of time it takes in education, etc., where work seems to take the direction of having the Medical Society to consider hiring an Executive Secretary to deal with this on at least a part-time basis. I would recommend that a recovering physician, with at least five years sobriety, an active interest in working with impaired physicians, and some experience in the subject of addictology be involved. It would be my recommendation that the Medical Society consider funding this person on a year-by-year basis with the first year being perhaps a salary of 12-15 thousand dollars for a one-fourth time physician, and perhaps this increased if the scope of the job warrants the time and expense. I would see this Executive Secretary assuming the responsibility for setting up interventions with physicians reported to have difficulties plus follow-up responsibilities with the procedures as recommended by the Georgia group. At this time, the person whom I would recommend would be Joe Martindale from Benton. I would see the position as being under the direction of the Impaired Physicians Committee, with all decisions and recommendations funneled through this committee and direction furnished by the Committee.

SUPPLEMENTAL REPORT OF THE COMMITTEE ON MEDICAL LEGISLATION

James R. Weber, Chairman

You will be happy to know that according to the representatives of the U. S. General Accounting Office who are in Little Rock this week, Arkansas has the lowest malpractice rate in the nation. The GAO is conducting a study of six states to determine the extent of the problem with professional liability rates as a part of health care cost. The GAO is trying to determine why Arkansas has lower rates than any other state in the nation. I can tell you that part of this is the results of the lobbying efforts of the Arkansas Medical Society.

In this session there were three issues we defeated that would have increased the cost of your malpractice rates. They were: the extension of the statute of limitation, prejudgment interest, and comparative fault.

Because of efforts by the Arkansas Medical Society staff prior to and during the Legislative Session, the Certificate of Need Process will not be extended to physicians' offices as it pertains to the purchase of diagnostic equipment. There will be no changes in the Informed Consent Law.

The Society was successful in stopping the introduction of legislation that would prevent physicians and their immediate family from having an ownership in pharmacies.

The much discussed Act 638 of 1983 by Osterloh was amended to extend the period of time to collect for your fees from 18 to 24 months and stipulations were placed on the law to provide that any partial payment would extend the period another 24 months.

The state will have a Reproductive Health Monitoring System to analyze and collect data pertaining to birth defects.

Thanks to Dr. Asa Crow the State now has an Indigent Health Care Program which will receive funding of approximately 12 million dollars to use over the next three years to attempt to alleviate some of the problems associated with indigent health care.

Arkansas has a new definition of death that is in compliance with many other states. The defini-

tion was developed through a joint effort of the AMA and the American Bar Association.

Due in a large part to the Society staff, UAMS will use tax funds to establish a Chair on Alcohol and Drug Abuse. The legislation required a vote of 75% of each house.

The responsibility for determining which drugs can be used by optometrists was transferred from a special committee to the Optometry Board. This is currently the law in 40 states.

The Arkansas State Medical Board will have one new black physician as a member.

There were several attempts to pass legislation requiring the wearing of seatbelts in automobiles. These were unsuccessful.

Despite the efforts of chiropractors and optometrists, legislation was not passed that would have killed any type of preferred provider organizations.

Legislation failed to pass requiring insurance companies to pay social workers.

Additional action will possibly be needed to correct one act that we thought exempted all physicians' offices from the use tax on medication. This can be corrected in the next special session.

The Governor has until April 18th to sign the bills that were passed. Following the Society's Annual Session a complete report of the Legislative Session will be mailed to all members.

My personal thanks to those physicians and their spouses who contributed to the State Legislative Fund. It was of great benefit to our lobbying efforts. And, thank you to those physicians who served as Physician of the Day, to those who called or wrote their legislators or met with us to discuss key issues.



"Carrying Our Case To The Patient"

JAMES E. DAVIS, M.D.
Speaker of the House
American Medical Association

For the Arkansas Medical Society
Hot Springs, Arkansas
April 21, 1985

I wish Thomas Paine had not said 200 years ago, "These are the times that try men's souls."

I would like to coin that phrase today for surely these are trying times for the souls of men and women and the soul of medicine.

Importantly, there is a dichotomy abroad in the land—a dichotomy of attitudes, of beliefs, of opinion that influences greatly the medical profession and threatens to divide us badly.

On the upside... the better half of the situation.

These are truly golden days for our profession ... for medical science ... for the care of people.

All of us, whatever our form of practice, whatever our specialty or primary interest, are able to do more than any of our predecessors could even dream of doing.

We are diagnosing our patient's medical problems more accurately than ever.

We are treating, curing, ameliorating or controlling their problems more effectively than ever before.

And often in ways not known just a few years ago.

As a result, in just the past few years, we have seen dramatic reductions in mortality from heart disease, from stroke and from other major causes of death.

We see patients living longer than ever before.

We see many of them cured of a malignant diagnosis that was inevitably a death sentence not very long ago.

We have seen the eradication of most childhood diseases. Polio, measles, and mumps have almost disappeared.

Truly, Americans living today are the beneficiaries of the best health care that mankind has ever known.

What more could anybody possibly ask of us?

The answer is ... plenty.

Because the other half of this dichotomy is that there has never been a time when we were subject to as much criticism by all of society, and specifically by government and industry, the recognized leaders of society.

There has never been a time when we were so subjected to laws and regulations and programs and projects designed to limit us ... to restrict us ... to hamper us ... to repress us. Actually to stop us from doing many of the things we are doing. How can that be?

The answer, of course, lies in the cost of medical and health care.

As medicine has reached unprecedented heights, it has become more costly.

What that has done is turn the nation's attitudes and goals around 180 degrees.

From a long period in which the entire nation cheered whatever we did, and shouted for more. We have come to a time when that same nation is saying in effect, "Stop. Enough. Do less".

And all in the name of saving money for the government and for business and industrial employers.

Today, we've got reduced benefits to employees
- — full coverage only if employees go to designated PPOs.
- — mandated second opinions, hoping the procedures will never be done.
- — mandated pre-admission approval.
- — payment for many procedures only if done in designated sites ... such as, out-patient facilities.

As people are going to realize very soon, much of the effort to reduce the cost of health care for employers and the government means nothing more than letting the people pay for it themselves.

The government is going even farther than private industry in reducing its payments for the care of people for whom it has been responsible since it set up its own programs.

And be sure you clearly understand one thing:

Everything being done . . . by business or by government . . . is not to contain cost. It is to contain payment. Paying less for a service does not affect the cost of providing it. It only affects whether or not people can afford to get it.

I'm not going to turn this into a legislative recital, but the President's budget for fiscal 1986 cuts billions of dollars in federal payment out of programs that the government itself designed and implemented.

As just a few examples, for Medicare Part A, it proposes to hold hospital payment rates to 1985 level, to reduce both direct and indirect payment for medical education and to establish a co-payment for home health visits.

Under Part B, it would continue to freeze physician fees for another year (at 1982 rates), freeze clinical laboratory fees, increase the premium for beneficiaries, and increase the deductible according to the medicare economic index.

That gives you an idea of what is going on.

Lest you think this situation pits us against the world, let me say there is also a dichotomy in the minds of the people of this country concerning health care and payment for it.

A recent analysis of *15* national public opinion polls (published in The New England Journal of Medicine):

1. Though cost is the #1 health care problem, it does not rank high among the most important issues facing the nation (it actually ranks #11).
2. Americans are ambivalent in regard to health care costs.
 A. They are disturbed about sharply rising costs.
 B. They are not troubled about the share of the nation's economy spent (unlike the national leaders/economists).
 C. Most feel our society spends too *little* (*not* too much).
3. Although most people believe the present health care arrangements are not satisfactory, they do not want to change the way in which they currently receive medical care. They still like their own doctor:
 — 72% feel their own doctor is not too interested in making money.
 — 77% think he/she does spend enough time with them.
 — 71% of their own doctors' fees are usually reasonable.

And now the question is . . . what are we doing about all of this?

The answer, fortunately, is that we are doing a great deal about it!

Time doesn't allow an evaluation issue-by-issue, but let me say that we are fighting constantly, in Congress, in state houses (with your help), in the Federal bureaucracy, in courts, in the education of the public, and in the formation of public opinion.

Yes, these are troubled times. These are times requiring best efforts of *us all.*

Let me interpose . . . a similar dichotomy exists in our profession.

At this time, the AMA has never been stronger.
— More members than ever before.
— Financially secure, extremely active organization with more programs, more benefits than ever before.
— We are strengthened by the Hospital Medical Staff Section, student, residents, medical school sections.

The AMA is now more influential than ever.

A recent study by University of Chicago sociologists was a two year survey to trace the major health policies in the U. S.

Of representatives of *136* public/private organizations involved in financing and delivering health care, *90*% chose the AMA as the most influential health policy maker—more than any other entity, private or public.

And yet the down side of this is:

Less than 50% of physicians in this country belong to the AMA/constituent associations.

They, like we, are besieged with problems . . . of regulation . . . of competition of alternative systems . . . of professional liability matters . . . of the removal of much care from the hospital to alternative sites.

I am convinced many in the non-member half fully realize that everything that your State Society, the American Medical Association, you and I work for and accomplish benefits them as well as us.

This is to say that only every other physician in the country wants to do anything about the situation.

I feel strongly that every physician who gives a tinker's dam about the future of medical care in this country (not just their own practice) ought to be a member of the AMA . . . and the Arkansas Medical Society . . . supporting our efforts . . .

AROUND THE CONVENTION



API executives Dick Clark, Roger Detrich, and William N. Meyer visit with Past President George F. Wynne at the API cocktail party on Saturday evening.



Frank and Margaret Ann Morgan of North Little Rock. Mrs. Morgan is president-elect of the Southern Medical Association Auxiliary



Members of the Executive Committee and their wives greeted members of the Society at the Council reception on Friday evening. J. Larry Lawson of Paragould is chairman of the Council.



Ronald and Kaye Bracken of Hot Springs. Dr. Bracken served as chairman of the Annual Session Committee for the 1985 meeting.



President Charles F. Wilkins, Jr., with members of the Medical Society staff at the inaugural banquet. (Seated, left to right) Ann Lansdell, Debbie O'Bar, Associate Executive Vice President Leah Richmond, Vicki Hurst, Nadine Gentry of the Little Rock office, Dee Edwards, Peggie Branham, and Patricia Williams.



James Gardner of Hot Springs (left) is chairman of the Annual Session Committee for 1986. Richard Gardial of Hot Springs (center) was chairman of the 5K Fun Run at the 1985 meeting. Mrs. Gardial is on the right.

AROUND THE CONVENTION



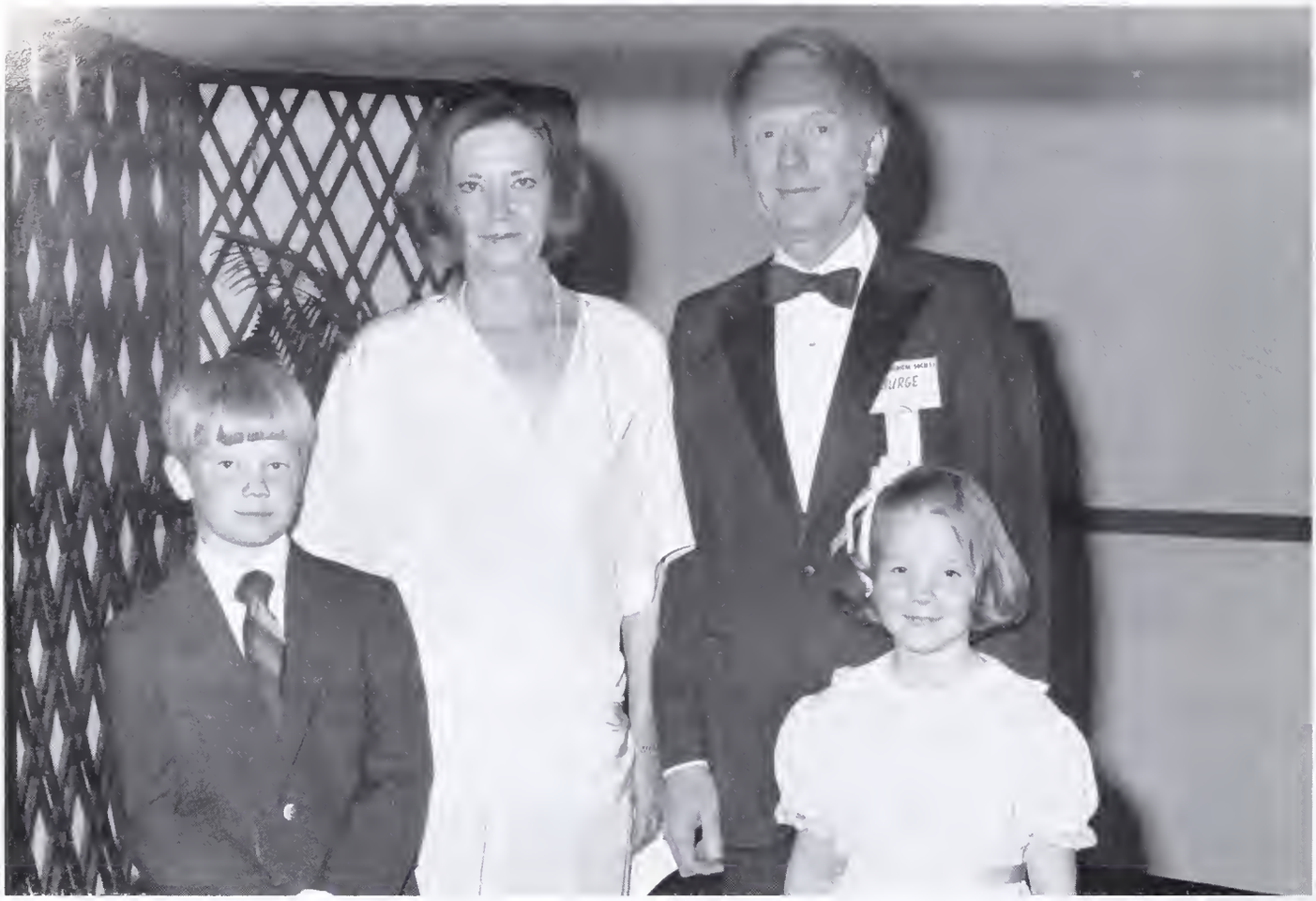












President John P. Burge, his wife Eleanor, and children John and Davis.



Family of the new president, John P. Burge, at the inaugural dinner-dance included his mother, Mrs. John H. Burge; his wife Eleanor, his children John and Davis; his sister and brother-in-law Mr. and Mrs. Tracy Scott of McGehee; his sister Mrs. Dave Jones of Hollendale, Mississippi; his cousin and cousin-in-law Mr. and Mrs. Robert Schwartz of Westin, Connecticut; and his sister-in-law and brother-in-law Mr. and Mrs. John Cope of Hollendale, Mississippi.

and helping to carry the fight for medical freedom and good patient care.

I realize I may this morning be singing to the choir/preaching to the saved. But, we must carry our membership campaigns to every single physician in this country, and let them know that membership in our organizations and participation in our endeavors are no longer optional . . . no longer elective!

Finally, what's going to happen as these dichotomies continue to influence us and our country?

Certainly, we (you, I, Arkansas Medical Society, the AMA, our profession) won't win every battle in the troubled and difficult days ahead.

And yet, I am firmly convinced that we will win the war:

War— for proper health care for all Americans.
- for physician freedom (to practice as we know we should . . . to remain the patient's advocate . . . to make the ultimate decisions concerning treatment . . . (of course with the patient's informed concurrence).
- for fair and equitable remuneration.
- for the control of health care in this country in the future (with perhaps more partners than we would choose).

I say this not as a pollyanna seeing only good, being blinded to the bad. I say this because we have faced many serious challenges before and we have won (not all the battles, but we have won the big wars).

As examples, the prepayment system of the 1930s, the Medicare problems of the 1960s. Both seriously threatened to totally change our health care system, to take control of the system away from us if not properly constructed and implemented. Yet by working with these problems, by working with all parties concerned, by working with all the people, these programs have both constructed to allow the people of this country to receive the care they need . . . and do it without being obsessed, overburdened with cost.

I say we will win the war primarily because we've got something going for us no one else does.

Not government, not industry, not politicians, not economists, not social planners, not anyone else.

We are the profession that cares for patients.

We are the ones they come to when they're sick or hurt.

We are the ones who lay hands on them and make them well.

Everything else—the cost, the practice modes, the competition, the government programs, the insurance programs, important as they are, really are incidental.

I believe the public opinion polls are telling us that, telling us that the people realize that!

I am convinced:
- as long as we truly, sincerely, actually remain the patient advocate, his friend, his healer.
- as long as we remain concerned about the costs of health care in the aggregate. Work to eliminate waste, the unnecessary, redundancy, *but* remain dedicated to seeing that our patient gets whatever he/she needs to recover and to live.
- as long as we continue to deliver quality care (care we would want for ourselves/family) to every single patient we have.
- as long as we retain our professionalism . . . resisting comparisons with and being treated as tradesmen.
- as long as we remain loyal to our dedication/our calling to care for human beings . . . to care for them in the physical . . . the philosophical . . . the emotional . . . the loving sense of the word.
- as long as we do these things, we will prevail.

We have always met the problems, the challenges that have been thrown against us in the past . . . and have turned them into opportunities.

We'll meet the ones we now face and that are coming in the future, too.

We have to.

Because there's no one else to take care of all of those patients, and the public/the patients know it!



FINAL SESSION
HOUSE OF DELEGATES

Speaker of the House Amail Chudy called the final session of the 109th meeting of the House of Delegates to order at 10:10 a.m. Speaker Chudy gave the invocation.

Voting members of the House who registered for the final session were: ASHLEY, D. L. Toon; BAXTER, Robert Baker; BENTON, Jan Turley, BOONE, H. V. Kirby; BRADLEY, W. C. Whaley; CARROLL, Oliver Wallace; CHICOT, Tom Tvedten; CLARK, Patrick L. Weber; COLUMBIA, John Ruff; CRAIGHEAD-POINSETT, James Robinette, Michael Mackey, James Sanders and Michael Tedder; CRAWFORD, Millard C. Edds; CRITTENDEN, C. Herbert Taylor; DREW, Andrew David; GARLAND, Richard Gardial, William R. Mashburn and Brenda Powell; GREENE-CLAY, J. Darrell Bonner; HEMPSTEAD, James Branch, Jr.; JACKSON, Ramon E. Lopez; JEFFERSON, John Crenshaw, L. A. Forestiere and George Roberson; LAWRENCE, Ralph Joseph; MEDICAL STUDENT, Lance Lincoln; MILLER, Paul Meredith; MISSISSIPPI, Clint G. Melton; OUACHITA, R. H. Nunnally; PHILLIPS, Robert Miller; POPE, Frank Lawrence and Joe Lyford; PULASKI, Paul Cornell, Charles Crocker, Warren Douglas, Gregory Dwyer, Ellery Gay, William Golden, Edwin Hankins, Fred Kittler, Jay Brainard, Marvin Leibovich, Jerry Mann, William Morton, Reid Henry, Gordon Oates, Mayne Parker, Gilbert Dean, Jerry Holton, Thomas Bruce, Robert Shannon, and James McDonald; SALINE, Marvin Kirk; SEBASTIAN, A. C. Bradford, McDonald Poe, Jr., Morton C. Wilson, and David Busby; TRI-COUNTY, Michael Moody; UNION, Raymond N. Bowman and Wayne G. Elliott; VAN BUREN, John A. Hall; WASHINGTON, Timothy Moritz, Lee Parker, Jr., David Rogers, and James Sharp; WHITE, Daniel S. Davidson; YELL, James L. Maupin; COUNCILORS, J. Larry Lawson, Jim E. Lytle, John Bell, John Hestir, Paul A. Wallick, George Warren, Cal R. Sanders, James D. Armstrong, E. K. Clardy, Ronald J. Bracken, William N. Jones, Frank E. Morgan, Harold D. Purdy, Charles W. Logan, Richard N. Pearson, Robert H. Langston, and Ken Lilly; PRESIDENT, John P. Burge; FIRST VICE-PRESIDENT, Charles H. Rodgers; SPEAKER OF THE HOUSE OF DELEGATES, Amail Chudy; VICE SPEAKER OF THE HOUSE OF DELEGATES, Sybil R. Hart; SECRETARY, James R. Weber; TREASURER, James M. Kolb, Jr.; PAST PRESIDENTS, Joe Verser, C. R. Ellis, Ross Fowler, Stanley Applegate, Ben N. Saltzman, A. S. Koenig, Jr., George F. Wynne, A. E. Andrews, Kemal Kutait, Asa A. Crow, and Charles F. Wilkins, Jr.

Speaker Chudy presented the slate of officers as proposed by the Nominating Committee:

President-Elect Ken Lilly, Fort Smith
Joe Verser, Harrisburg
First Vice-President Milton Deneke, West Memphis
Second Vice-President Arthur E. Squire, Jr., Little Rock
Third Vice-President Raymond N. Bowman, El Dorado
Treasurer James M. Kolb, Jr., Russellville
Secretary James R. Weber, Jacksonville
Speaker, House of Delegates Amail Chudy, North Little Rock
Vice Speaker, House of Delegates..Sybil R. Hart, Blytheville

Councilors:

First District M. J. Osborne, Blytheville
Second District Jim E. Lytle, Batesville
Third District John Hestir, DeWitt
Fourth District Lloyd G. Langston, Pine Bluff
Fifth District George Warren, Smackover
Sixth District F. E. Joyce, Texarkana
Seventh District E. K. Clardy, Hot Springs
Eighth District Ray Jouett, Little Rock
Charles Logan, Little Rock
Ninth District Richard Pearson, Rogers
Tenth District W. P. Phillips, Fort Smith

Delegate to the American Medical Association T. E. Townsend, Pine Bluff

Alternate Delegate to the American Medical Association W. Payton Kolb, Little Rock

Dr. Verser asked that his name be removed from the slate of nominees. Dr. Lilly was elected by acclamation.

Nominees for other positions as proposed by

the Nominating Committee were elected by acclamation.

James Armstrong, chairman of the Nominating Committee, advised members of the House that the election of Ken Lilly to the position of president-elect created a vacancy in the position of tenth district councilor. The Nominating Committee nominated Morton Wilson of Fort Smith to fill the unexpired term of councilor and the House elected Dr. Wilson to the position.

Speaker Chudy requested that Ben Saltzman and Kemal Kutait escort Ken Lilly to the podium. Dr. Lilly addressed the House as follows in accepting the position of president-elect of the Society:

"I am indeed honored that you elected me today your president-elect. I am so happy to have the opportunity to serve you again in another capacity. I want to especially thank my friends, Kemal Kutait and Pat Phillips, for their assistance in persuading the Nominating Committee to nominate me this year and to George Warren for making that nomination. I do want you to know that I will do my very best. I want to make myself available to you. If there is any time that I can come to your local society and find out specific problems that you have and help you to either solve them there or bring them back to the Council or the House of Delegates, I will be glad to do that. I welcome the opportunity to serve you in that way because I will become better informed and be better able to serve you when I do become president next year. I do appreciate from the bottom of my heart the friendship that each one of you has shown me down through the years. You have truly been my friends and will be my friends. I know that when the time for service is over, that I will be like Charles Wilkins was. I will be free at last, but I really do appreciate this opportunity and thank you so much."

Speaker Chudy recognized the Delegate to the American Medical Association, A. E. Andrews of Texarkana. Dr. Andrews introduced James E. Davis, Speaker of the House of Delegates of the American Medical Association. Dr. Davis addressed the House; his remarks are printed elsewhere in this issue.

Vice Speaker Hart called for the report of Reference Committee Number One.

REFERENCE COMMITTEE NUMBER ONE REPORT

Morton Wilson, Chairman

Mr. Speaker, members of the House of Delegates and honored guests: Your reference committee gave careful consideration to the items referred to it. Your committee recommends the following reports be received for information:

1. Committee on Public Health
2. Sub-Committee on Maternal and Child Welfare
3. Public Relations Committee
4. Sub-Committee on Liaison with Vocational Rehabilitation
5. Annual Session Committee
6. Committee on Aging
7. Fourth District Councilors
8. Fifth District Councilors
9. Seventh District Councilors
10. Eighth District Councilors
11. Report of the Medical Student Component Society.
12. Report of the Arkansas Medical Society Political Action Committee

In addition to these reports, the Reference Committee makes the following additions to the information provided in a report from the Medical Student Component Society.

(a) A medical student observer to a Reference Committee is to be selected by the Speaker of the House from a list submitted by the Medical Student Component Society. This list will be submitted to headquarters of the Arkansas Medical Society before December 31st.

(b) A single member from the Medical Student Component Society is also invited to be an observer of all standing committees. An attempt to notify the president of this component society will be made in advance of the committee meeting.

Mr. Speaker, I move adoption of these proposals.

The members of Reference Committee Number One express their appreciation to all the members of the various committees for the time and effort devoted to their activities.

I wish to express appreciation to other members of the Reference Committee: John A. Baldridge of Jonesboro, Jerry Mann of Little Rock, Paul Anderson of Fort Smith, Ronald J. Bracken of Hot Springs, and the medical student observer, Charles Graham.

Vice Speaker Hart reviewed the list of items which the reference committee recommended be received for information. There was no objection to receiving the items for information. Dr. Hart

ed for any objection to the proposals regarding the Medical Student Component Society and received no objection.

Speaker Hart thanked Dr. Wilson and his committee for their work on the reference committee.

Upon motion of Purcell Smith, the House accepted the report of Reference Committee Number One as presented.

Speaker Chudy called for the report of Reference Committee Number Two.

REFERENCE COMMITTEE NUMBER TWO

Charles H. Rodgers, Chairman

Mr. Speaker and members of the House of Delegates: Your reference committee gave careful consideration to the items referred to it and makes the following report.

1. Sub-Committee on National Legislation

 The report was discussed by the Reference Committee and was amended to include the name of Payton Kolb as a member. The Reference Committee calls attention to the recommendation in the report that members regularly review information on current legislative issues as published in the *American Medical News.*

 Mr. Speaker, the Reference Committee recommends that the amended report be received for information.

2. Medical Services Review Committee

 The Reference Committee discussed the report from the Medical Services Review Committee and recommends that it be received for information.

3. Report of the Council

 The Reference Committee discussed the report of the Council as published and the Supplemental Report as distributed to members of the House.

 Mr. Speaker, the Committee recommends that the reports be adopted as written.

 The Reference Committee discussed the Addendum to the Council Minutes as published on page 571 of the March issue of the Society Journal consisting of position papers entitled "Arkansas Medical Society" and "Informed Consent" and recommends adoption as written.

4. Report of the Council from the meeting held on Thursday, April 18, 1985

 Mr. Speaker, the Reference Committee discussed the supplemental report of the Council regarding the $100 dues increase. This was presented to the House on Thursday, April 18, 1985.

 In general, the Committee, after lengthy discussion with Society members and in executive session, agreed with the Council's recommendation that a $100 dues increase is necessary.

 The Reference Committee appreciates the hard work of the Budget Committee and commends the Budget Committee for its recommendations to reduce costs. The Reference Committee recommends that the Budget Committee act more in an advisory capacity to the Council and its chairman and members not necessarily have to defend every line item on the budget. The Reference Committee feels that the chief executive officer, or a person on his staff designated by him, should be the one that is responsible to the Council and the members of the Society for full disclosure and current, accurate budget information.

 (At this point, Dr. Rodgers advised the members of the House that the Council has received a very clear explanation of the financial standing of the Society as prepared by Dr. Long and his staff. He requested that Mr. LaMastus present the information to the House because of the many questions presented at the reference committee meeting on Thursday. Mr. LaMastus reviewed the figures which had been presented to the Council. The figures are printed elsewhere as a supplement to the Council minutes.)

 Continuing with the reference committee report, Dr. Rodgers stated that it was very clear to the Reference Committee that many councilors, delegates, and members were very unsure about the budget, where the money was going and the need for a dues increase. The Reference Committee appreciates the report of the Society finances and recommends that it be distributed to the entire membership.

 The Reference Committee feels that if a dues increase is needed and approved, the councilors and delegates of this Society should make every effort to sell it to their constituency. If this is not done, we feel that there will be a loss of members as a result of their not being fully informed. In view of the above, the Committee recommends that we

do not vote on the recommended dues increase for a period of at least three or four months. If, indeed, the Council feels a dues increase is necessary, we recommend that there be a called meeting of the House of Delegates in the fall of 1985 for the express purpose of voting on the proposed dues increase.

This Committee recommends to the Budget Committee and the Council, acting as the finance committee of the Society, that they look into an adjusted dues increase yearly to account for inflation. Hopefully, this would help prevent a financial crisis so that in the future the Society would not have to inflict upon its members a large increase in the annual dues or an assessment of its members.

In addition, the Reference Committee recognizes that there were some differences of opinion on the exact amount of cash reserves (which has now been cleared up). We request that the Budget Committee make every effort to satisfy all the members of the exact amount of all cash reserves. We would like the Budget Committee to make recommendations to the membership on what they feel is an adequate cash reserve to insure our financial position in the future.

Mr. Speaker, we recommend that the above recommendations be received for information. The Committee would like to receive recommendations from the floor regarding the dues increase.

Speaker Chudy recognized delegate Paul Cornell from Pulaski County. Dr. Cornell addressed the House as follows:

Being a Polack from Pulaski County, I want to talk a little about Solidarity. Pulaski County is very concerned about the welfare, the future welfare, of both the financial aspects of this organization and the emotional aspects. We would like to recommend an amendment to the report of the Reference Committee. In the third paragraph, second page, third sentence be deleted and the remainder of the paragraph remain the same. The portion to be deleted reads: "In view of the above, the committee recommends that we do not vote on the recommended dues increase for a period of at least three or four months. If, indeed, the Council feels a dues increase is necessary, we recommend that there be a called meeting of the House of Delegates in the fall of 1985 for the express purpose of voting on the proposed dues increase." Pulaski County feels that this is inappropriate activity at this time. We propose changing the recommendation to: "In view of the above, it is recommended that a dues increase of $100 be made for a period of one year only. A reassessment of the Society's financial situation may then be available at the annual meeting". The vote on the substitute motion by Dr. Cornell was 86 for, 13 against; thus, approving a $100 dues increase for 1986 only.

5. Report of the Executive Vice President

 Your Reference Committee recommends that the Report of the Executive Vice President be received for information. The Committee, on behalf of the House of Delegates, wishes to express our sincere appreciation to C. C. Long for his years of devoted service and expert guidance to the Arkansas Medical Society.

6. Report of the Budget Committee

 The Reference Committee discussed the budget as printed in the March 1985 issue of the Society Journal.

 Mr. Speaker, the Reference Committee recommends the adoption of the budget as published.

7. Report of the Position Papers Committee

 The Reference Committee recommends that the Report of the Committee on Position Papers be received for information.

8. Cost Effectiveness Committee Report

 Your Reference Committee reviewed the published report of the Cost Effectiveness Committee and wishes to encourage each member of the Society to obtain the recent AMA pamphlet on controlling health care costs.

 Mr. Speaker, your Reference Committee recommends that the report of the Cost Effectiveness Committee be received for information.

9. Report of the Building Committee

 Your Reference Committee is aware of the many hours that this committee has spent on behalf of our Society and we wish to formally commend the members of the Building Committee for their efforts.

 Mr. Speaker, your Reference Committee

INAUGURAL BANQUET



President Charles Wilkins presents the "Drs. Joe and Elvin Shuffield" award to Mr. Dewey Lantrip.



President Charles Wilkins was master of ceremonies for the inaugural dinner on Saturday of the convention.



Mr. Lantrip expresses appreciation to the Society for the Shuffield award.



John P. Burge of Lake Village takes the oath of office of president of the Arkansas Medical Society.



Joe Norton, Chairman of the Committee on Aging with the Health Advocate of the American Association of Retired Persons and winner of the Shuffield award, Mr. Dewey Lantrip, and Mr. Lantrip's daughter.



Immediate Past President Charles Wilkins pins the "President" badge on John P. Burge.

INAUGURAL BANQUET



The gavel, symbol of authority of the office of president of the Society, passes from Charles Wilkins to John Burge.



John P. Burge makes his inaugural address as the 110th president of the Arkansas Medical Society.



John P. Burge expresses the Society's appreciation to Charles F. Wilkins for his outstanding year as president of the Society.



John P. Burge, President of the Arkansas Medical Society for 1985-86.



Immediate Past President Charles Wilkins receives a plaque of appreciation for his year of service.



Gwen Pappas, 1984-85 president of the Arkansas Medical Society Auxiliary, and her husband Deno.



Ken Lilly of Fort Smith, president-elect of the Society for 1985-86.



Joyce Brown Wilkins receives special introduction from President Charles Wilkins at the inaugural banquet. Others at the headtable are James E. Davis, Speaker of the House of Delegates of the AMA, Cynthia Weber and James Weber, Secretary of the Arkansas Medical Society.



Robert Thurlby of the Millard-Henry Clinic presented a gift to Charles Wilkins from his colleagues at the clinic.



Past presidents of the Society were on the stage for the inauguration of John P. Burge as the new president of the Society. They are (from left) Joe Verser, Joe Norton, Asa Crow, H. W. Thomas, Ross Fowler, Stanley Applegate, A. S. Koenig, W. Payton Kolb, Kemal Kutait, A. E. Andrews, Morriss Henry, Purcell Smith, Ben Saltzman, and C. R. Ellis.



Vice Speaker Sybil Hart, Speaker Amail Chudy, and Chairman of the Council Larry Lawson confer on Society business.



Members enjoyed dancing to the Betty Fowler Band during the inaugural dinner.



The new president, John P. Burge, is applauded after taking oath of office.

recommends that the report of the Building Committee be received for information.

10. Report of the Mental Health Committee

Your Reference Committee reviewed the report of the Mental Health Committee and heard an update on legislative action from Payton Kolb. He reported a resolution passed in the House and Senate for the creation of a Federal task force for the prevention of teenage suicide. It is recommended that the report, with this addition, be received for information.

Notification was also given of the reorganization of the State's Human Services Department with the appointment of a Deputy Director to be made for the Mental Health Division.

Your Reference Committee recommends that the report be received for information and that the House of Delegates request that the Governor and the Director of Human Services appoint a board-certified Psychiatrist as Deputy Director.

11. Impaired Physicians Committee

The Reference Committee recommends that the Council change the name of the Impaired Physicians Committee to avoid the automatic designation of impaired physician to those who elect to go into the program.

The Reference Committee recommends that the Committee on Impaired Physicians seek legal counsel to determine the extent of liability, if any, for all committee members both individually and collectively and for the Society as a whole. We agree that the executive secretary of this committee should be compensated and we request that the committee and the State Medical Board look into innovative ways of funding this program.

Mr. Speaker, the Reference Committee recommends that the Report of the Impaired Physicians Committee be received for information.

Mr. Speaker, this concludes the report of Reference Committee Number Two. I move adopted of the entire report as amended. The House so voted.

Mr. Speaker, I wish to thank those who appeared before this Reference Committee, my fellow members of the Committee, and those members of the staff who assisted us.

Speaker Chudy recognized Ralph Joseph of Walnut Ridge as chairman of the Reference Committee Number Three. Dr. Joseph presented the following report:

REFERENCE COMMITTEE NUMBER THREE REPORT

Mr. Speaker, members of the House and honored guests; other members of Reference Committee Number Three were George V. Roberson of Pine Bluff, David L. Barclay of Little Rock, Raymond N. Bowman of El Dorado, and W. P. Phillips of Fort Smith.

Mr. Speaker, your committee recommends the following reports be accepted for information:

1. Report of Committee on Medical Legislation
2. Report of Committee on Continuing Medical Education
3. Report of the Sub-Committee on State Health and Medical Resources for Civil Defense
4. Reports of the Professional Relations Committees for the Second, Eighth, Ninth and Tenth Districts
5. Report of the Medical Education Foundation for Arkansas
6. Report of the Arkansas Department of Health

Mr. Speaker, the Committee recommends adoption of the resolution from Sebastian County Medical Society as published. I so move. It was so voted.

Mr. Speaker, your Committee recommends adoption of the Report of the Constitutional Revisions Committee as presented. I so move. It was so voted.

Mr. Speaker, this completes the report of the Reference Committee Number Three. I move the adoption of the report as presented.

Mr. Speaker, I wish to thank those who served on the Committee with me.

Chairman of the Council Larry Lawson presented the Supplemental Report of the Council for actions taken during the Annual Meeting:

REPORT OF THE COUNCIL

The Council met on Thursday, April 18, and transacted business as follows:

1. Approved actions of the Executive Committee:
 (A) Selection of Kay Clawson, M.D., to present the first Shuffield Lecture
 (B) Selection of individuals to receive complimentary tickets to the inaugural banquet at the 1985 annual session
 (C) Authorized letter of endorsement to Data National accepting their offer to

cooperate with them in publishing a statewide health directory.

2. Received a report from the Budget Committee and approved the following recommendations of the Committee:
 (A) That payment of mileage allowance to councilors for Council meetings be discontinued.
 (B) That $500 be contributed toward publication of the Health Department's book on "A History of Public Health in Arkansas".

 (Note: Council action regarding a dues increase was reported to the House on Thursday.)
3. Approved the following appointments to the Search Committee for selection of an executive vice president to succeed C. C. Long:
 John Hestir, Chairman
 Asa Crow
 James M. Kolb, Jr.
 Cal Sanders
 James Weber
 Charles Rodgers

The Council met on Friday, April 19, and conducted business as follows:

1. Heard a report from the Building Committee and the project developer.
2. Recommended to the Board of Trustees of the Society Pension Plan that the plan be amended so that an employee who has attained age 21 and has completed three months of employment will participate in the plan from the first date of employment.
3. Considered a proposal that the executive search committee also serve as a transition committee to offer guidance to the new chief executive. The Council voted to have the Executive Committee function as advisory committee to the new chief executive, with input from the chairmen of the Search Committee, the Building Committee, and the Budget Committee at the discretion of the Executive Committee.
4. Approved requests for dues exemption as submitted by the component societies.

The Council met on Saturday, April 20, and took action as follows:

1. Nominated Pat Phillips of Fort Smith for reappointment to the Board of Trustees of Blue Cross-Blue Shield.
2. Reappointed Alfred Kahn of Little Rock as editor of the Society Journal.
3. Reappointed Joe King of Nashville and James Maupin of Fort Smith for membership on the Arkansas State Arbitration Commission.
4. Appointed the following to one-year terms on the Board of Directors of the Arkansas Medical Society Political Action Committee: John Hestir, Charles Rodgers, James M. Kolb, Jr., Samuel Koenig, Milton Deneke, Margaret Harris, John Crenshaw, Robert Miller, Ken Lilly, Ramona Taylor, Roger Cagle, Richard Martin, John Giller, Paul Meredith, Judy McDonald, Esther Lopez, Robert Langston, Joe Stallings, C. G. Melton, and Daniel Davidson.
5. Approved "Rules and Regulations" drafted for the operation of the Medical Services Review Committee.
6. Heard a discussion by the ninth district councilors regarding the apathy of members of the Medical Society. It was generally agreed that there should be consideration of several suggestions for action by the Society to improve communication with members and delegates and to encourage more participation in Society activities.
7. Asa Crow discussed the possibility of the proposed dues increase being defeated in the House of Delegates and the alternatives open to the Society if the dues increase is not approved. The executive vice president presented information on the Society's cash reserves and budget projections for 1986 through 1987. The Council voted to meet after adjournment of the House of Delegates on Sunday, April 21, if necessary, to take whatever action is deemed necessary regarding the financial situation of the Society.

The Council met on Sunday, April 21, and took action as follows:

1. Heard a report from the AMA Leadership Conference attended by Charles Rodgers.
2. Reappointed James Weber, Asa Crow, and Payton Kolb as the trustees of the Arkansas Medical State Legislative Fund.
3. Reappointed Ray Jouett to the Board of Directors of the Medical Education Foundation for Arkansas.
4. Accepted the report of audit of the Society's records for 1984.

5. Authorized payment for two individuals for the MedCamps program.
6. Appointed representatives to the Medical Services Review Committee as follows:
 Family Physicians—Wendell Ross, Fort Smith
 Richard Gardial, Hot Springs
 Internal Medicine—John Schultz, Little Rock
 Surgery—Hugh F. Burnett, Little Rock
 Neurosurgery—Ray Jouett, Little Rock
 Psychiatry—Henry Good, Little Rock
 Urology—Morton Wilson, Fort Smith
 Anesthesiology—Robert Fisher, Fort Smith
 Appointed John Crenshaw of Pine Bluff as vice chairman of the Medical Services Review Committee.
7. Defeated a motion that the Arkansas Medical Society withdraw its support of the Arkansas Foundation for Medical Care (PRO organization).
8. Authorized appointment of a Society representative on a Community Health Consortium being created by the State Health Department.
9. Authorized the Society's Public Relations Committee and the Medical Society representatives on the State Board of Health to work with the Health Department in review of "Heartbeat" programs to be shown on public television.
10. Heard a report from the American Medical Association presented by the AMA Speaker of the House of Delegates, James E. Davis.

SUPPLEMENT TO REPORT OF THE COUNCIL ARKANSAS MEDICAL SOCIETY BUILDING, LIMITED PARTNERSHIP SUMMARY OF PERTINENT FACTS

Below is a summary of the pertinent facts regarding the offering memorandum for the Arkansas Medical Society Building, Limited Partnership.

The Building. The building will occupy 2.35 acres in the Corporate Hill Office Park in west Little Rock. It will contain 33,277 square feet on three levels with 27,202 square feet available for lease. The total budget for the building is $2,122,429.

Ground Lease. The Society, which owns the land, will lease the land to the partnership for forty years. During the first two years of operation of the completed building, the rent will be $1.00 per year. Thereafter, the rent will be $32,757 per year.

AMS Lease. The Society will lease 8,000 usable square feet on the third floor of the building for $13.25 per square foot for eighteen years, with a 6% annual escalation. The lease contains options to renew, under the same terms, until the forty year ground lease expires. In addition, the lease contains an option to purchase the building for the fixed sum of $1,250,000. The option is exercisable after the eighteenth year of the building's operation and will continue in force until such time as the lease is terminated. Other space in the building will be leased for $13.50 per usable square foot.

Financing. Worthen Bank and Trust Company was chosen from six financing proposals. The terms of the commitment provide for the execution of a nonrecourse note at two percent greater than Worthen's prime lending rate amortized over eighteen years with a balloon payment due in three years. The rate will float during the construction period but will be fixed during the remainder of the term. In no event will the rate exceed five percent greater than the Federal Reserve discount rate at the time the loan is closed. The maximum rate as of April 15, 1985, was 13%. Worthen's prime rate as of the same date was 10.5%.

General Partner. Flake and Company will serve as the general partner of the partnership. Flake and Company will also serve as the development manager and will be responsible for leasing the building and managing its operation upon completion.

Attorney. Overbey and Peace are the attorneys for the partnership. Cearley, Mitchell and Roachell are the attorneys for the Society.

Accountants. Peat, Marwick, Mitchell and Company are the accountants for the partnership.

Architects. Blass, Chilcote, Carter, Lanford and Wilcox are the architects.

Contractor. Kinco, Inc., is the general contractor. Kinco has indicated to Flake and Company and the architects that the budget given them for the building is achievable.

Projected Summary of Cash Flows
(Tax Benefits plus Cash Distribution)

Per Unit	
Initial Investment	$(14,300)
1985 (8 months)	333
1986	1,561
1977	2,601
1988	2,068

1989	1,875
1990	2,030
1991	1,977
1992	2,205
1993	2,197
1994	2,441
1995	2,596
1996	2,806
1997	3,069
1998	3,095
1999	3,368
2000	3,642
2001	3,916
2002	4,186
2003	4,452
2004 (4 months)	24,980
Total	$ 75,398

Internal Rate of Return. The internal rate of return is defined as that rate of discount at which the present value of future cash flows is exactly equal to the initial capital investment. As presented, the after tax internal rate of return for this project is 15.25%. This rate can be modified, however, if an investor were to obtain a loan for the amount of his down payment. For example, if an investor borrowed the full amount of the down payment and paid it back in three equal annual installments at 13% interest, the internal rate of return would be 17.54%.

SUPPLEMENT TO REPORT OF THE COUNCIL
SUMMARY OF FINANCIAL CONDITION
ARKANSAS MEDICAL SOCIETY
FOR YEAR ENDING DEC. 31, 1985

Financial condition as of January 1, 1985
(from audited financial statement)

Cash and Investments, Dec. 31, 1984[1]		$885,513
(Less Committed Funds):		
Deferred Compensation	$101,646	
Leah's early retirement fund	30,000	
Shuffield Lecture Fund	10,000	
State Legislative Fund	20,562	
Total Committed Funds		162,208
Total Funds Available Beginning 1985		$723,305
Revenue and Expenses for 1985		
(Approved 1985 Budget)		
Revenue Available for 1985:		
1985 Budgeted Revenue	$591,200	
Less 1985 Dues Collected in 1984	(72,710)	
Less Loss in Interest Income	(40,000)	
Total 1985 Revenue	478,490	
Add Funds Collected from Assessment	108,700	
Total Funds Available from 1985 Revenue		$587,190
Budgeted Expenses for 1985		(693,191)
Cost of Land for New Building[2]		(337,081)
Total Projected Deficit for 1985		(443,078)
Change in Financial Condition		
Total Funds Beginning Jan. 1, 1985		723,305
Less 1985 Deficit		(443,078)
Financial condition December 31, 1985		$280,227

[1]Includes $6,300 in collected dues assessment and $72,710 prepaid 1985 dues.

[2]$321,775—cost of land; *plus* $15,312 interest.

PROJECTED STATEMENT
OF FINANCIAL CONDITION
ARKANSAS MEDICAL SOCIETY
(Without and With a $100 Dues Increase)

	1985	*1986*	*1987*	*1988*
Without increase				
Funds available at beginning of year	$723,305	$280,227	$ 88,964	
Revenue for year (estimated)	587,190	549,190	549,190	
Expenses *(estimated)	(693,181)	(740,453)	(722,875)	
Land Costs	(337,087)			
Net Surplus (Deficit)	(443,078)	(191,263)	(173,685)	
Plus funds available at beginning of year	723,305	280,227	88,964	
Total funds at year end	$280,227	$ 88,964	$(84,721)	
With $100 dues increase beginning 1986				
Revenue (estimate 10% decrease in membership)	$677,440	$677,440	$677,440	
Income from ground rents			32,757	
Expenses	(740,453)	(722,875)	(759,018)	
Net Surplus (deficit)	(63,013)	(45,435)	(48,821)	
Plus beginning funds	280,227	217,214	171,779	
Total funds at year end	$217,214	$171,779	$122,958	

*Expenses are estimated to increase at 5% for inflation.

Upon motion of Lytle, the House adopted the Report of the Council as presented.

Speaker Chudy announced that two physicians had been nominated by members in the second congressional district for the position on the Arkansas State Medical Board: Robert Elliott of Searcy and Jim Lytle of Batesville. The House voted to submit the name of Jim Lytle to the Governor as the Society's nomination for the position on the State Medical Board.

The House adjourned at 12:00 noon.

GENERAL PROGRAM

The program theme was "Health Care Issues —1985." On Thursday afternoon, a socioeconomic seminar was presented with First Vice President Charles Rodgers presiding. Dr. Rodgers opened the seminar. Guest speakers included Paul M. Ellwood, Jr., President of Interstudy of Excelsior, Minnesota. Dr. Ellwood's presentations were entitled "Today's Medical Market" and "How Should Physicians Position Themselves for the Future?" Mr. Bill E. McCutchen, Acting Regional Administrator of the Health Care Financing Administration at Dallas, spoke on "Regulatory Medicine from the Government's Perspective." A presentation on "The Competitive Medical Market" was made by Mr. Joseph DiLorenzo, Vice President for Marketing, Hospital Corporation of America. The session ended with a question and answer session and a panel discussion.

The general session scientific lectures opened at 8:30 a.m. on Friday with a paper on "Total Colectomy—Indications and Results" presented by Robert L. Bomar, Assistant Professor of Surgery at Vanderbilt. Eugene N. Myers, Professor and Chairman of Otolaryngology at the University of Pittsburgh School of Medicine discussed "Lesions in the Oral Cavity." "The Relevance of Rehabilitation in Primary Care" was the topic for F. Patrick Maloney, Head of the Rehabilitation Medicine Division of the University of Arkansas College of Medicine. Alan I. Mandell, Clinical Associate Professor of Ophthalmology at the University of Tennessee Center for Health Sciences, discussed "Diagnosing Glaucoma with the Ophthalmoscope." "Regionalization of Perinatal Care—A Look Back and A Look Forward" was presented by George M. Ryan, Jr., Professor and Acting Chairman of the Department of Obstetrics and Gynecology at the University of Tennessee College of Medicine. Final speaker for the morning session was Gail G. Shapiro, Clinical Professor of the University of Washington School of Medicine and Chairman of the Section of Allergy and Immunology for the American Academy of Pediatrics. Second Vice President Morton Wilson presided at the Friday morning session.

The Saturday morning scientific session was opened at 8:30 a.m. by Ralph Joseph, Third Vice President. The first speaker was Roy Wilson Pickens, Ph.D., Professor of the Departments of Psychiatry and Psychology at the University of Minnesota, who discussed "Differential Effects of Benzodiazepines on Human Memory." W. Scott McDougal, Professor and Chairman of the Department of Urology at Vanderbilt University School of Medicine, presented "Current Concepts in the Management of Patients with Stone Disease." Harmon E. Holverson, Immediate Past President of the American Academy of Family Physicians, discussed "The Changing Role of the Family Physician." "New Concepts in Diagnosis and Treatment of Osteopororis" was presented by Robert W. Harrison, Associate Professor of Medicine at Vanderbilt University School of Medicine.

The first Annual Shuffield Lecture was presented at 10:50 a.m. on Saturday morning by Kay Clawson, Executive Vice Chancellor and Executive Dean, University of Kansas Medical Center. Dr. Clawson's topic was "The Physician in a Changing Society."

RELATED MEETINGS

The Department of Otolaryngology of the University of Arkansas College of Medicine held a "Problems Conference" for its otolaryngology residents and staff on Friday morning with Eugene Myers of Pittsburgh as guest speaker. On Friday afternoon, Dr. Myers was also guest speaker for the "Alumni Day" of the Department of Otolaryngology.

The Otolaryngology—Head and Neck Surgery group held a meeting on Saturday morning. Eugene Myers was also guest speaker for that group. Edwin L. Harper of Hot Springs was president of

the organization for 1984-85 and Dwayne L. Ruggles of North Little Rock was secretary-treasurer. John Dickens of Little Rock is the new president.

The Arkansas Chapter of the American College of Surgeons had a scientific program session and brunch on Friday with Robert L. Bomar as guest speaker. Charles W. Logan of Little Rock is president of the Chapter; John P. Burge of Lake Village is secretary-treasurer and Samuel E. Landrum of Fort Smith is president-elect.

The Arkansas Chapter of the American College of Obstetricians and Gynecologists held a luncheon meeting on Friday. David L. Barclay of Little Rock is chairman for the Chapter.

The Arkansas Orthopaedic Society held its annual meeting at the Sheraton Lakeshore Resort. There was an evening session on Friday and a brunch and program session on Saturday. Jerry Thomas of Little Rock was president for 1984-85 and Robert H. May of Russellville was secretary-treasurer. Dr. May was elected president for 1985-86 and Charles Ledbetter of Harrison was named secretary-treasurer.

The Arkansas Urologic Society held a brunch and presented a scientific program on Saturday morning, April 20. Steve Wilson of Fort Smith was president for 1984-85 and Ladd J. Scriber of Jonesboro was secretary-treasurer.

The Arkansas Academy of Ophthalmology had a program session and luncheon on Saturday, April 20, with Alan Mandell of Memphis as guest speaker. Carol Chappell of Little Rock is secretary of the Academy.

The Arkansas Chapter of the American College of Radiology had a luncheon and scientific program session on Saturday, April 20. Howard Cockrill, Jr., of Little Rock presented the program. Charles McClain of Batesville is president of the Chapter and Marolyn Speer of Stuttgart is Secretary-Treasurer. Robert Elliott of Searcy is president-elect.

The Arkansas Society of Internal Medicine held a luncheon meeting on Saturday, April 20th, with Robert Benafield substituting for George Mitchell as speaker. John Crenshaw of Pine Bluff is president of ASIM, William G. Golden of Little Rock is president-elect, and Jack L. Blackshear of Little Rock is secretary-treasurer.

The Arkansas Society of Pathology held a luncheon and business session on Saturday with Mr. Al Ercolano of the Washington Office of the College of American Pathologists as guest speaker. John Boyce of Springs is president of the Society and Robert A. Burger is secretary.

The Arkansas Chapter of the American College of Emergency Physicians held a luncheon and business session on Saturday, April 20. Mr. Jack Landry, Head of the Government Affairs Department of the American College of Emergency Physicians, was guest speaker. Eugene Shelby is president of the Chapter.

The Arkansas Academy of Family Physicians held a luncheon meeting on Saturday with Harmon Holverson as guest speaker. Robert Etherington of Eureka Springs is president of the Academy and Leslie F. Anderson of Lonoke is president-elect.

The Neurosurgery Section held a luncheon and business session on Saturday, April 20. William Chadduck of Little Rock is secretary of the group.

OTHER ACTIVITIES

PRESIDENTS' LUNCHEON

Physicians who have served as president of the Arkansas Medical Society were guests of the Society for a luncheon on Friday, April 19. Present were Kemal Kutait, Stanley Applegate, A. S. Koenig, H. W. Thomas, Charles Wilkins, A. E. Andrews, C. R. Ellis, and W. Payton Kolb.

FIFTY YEAR CLUB

Members of the Society who began practice fifty years ago this year were welcomed to the Fifty Year Club of the Arkansas Medical Society at its annual luncheon meeting on Friday, April 20. Frank Burton of Hot Springs was named president of the Club and Ross Fowler was named secretary.

Receiving club lapel buttons and certificates this year were Frank Burton, James Burnett, Gilbert Dean, Ross Fowler, Edwin Gray, C. W. Anderson, John Greutter, Robert Watson, Kenneth Seifert, James W. Branch. Other members present at the meeting were Edgar Easley, John McCollough Smith, John W. Jones, Jim McKenzie, and Henry Kirby.

PRAYER BREAKFAST

The Committee on Medicine and Religion, chaired by Walter H. O'Neal, sponsored a Prayer Breakfast on Sunday morning, April 21. The devotional was given by William L. Berry of Dardanelle. Other program participants were James Pennington of Ola and C. R. Ellis of Malvern.

MEMORIAL SERVICE

John Trieschmann of Hot Springs served as chairman for the Memorial Service. The program included Scripture readings by Dr. Trieschmann, solos by Mrs. Martha Scully, Prayer by Mrs. Betty Hill, and a Litany led by President Charles Wilkins. Names of deceased members of the Auxiliary were read by Mrs. Deno Pappas, president of the Arkansas Medical Society Auxiliary, as Dr. Wikins lighted candles for each deceased members. Mrs. Pappas lighted candles as President Wilkins read the names of deceased members of the Arkansas Medical Society.

IN MEMORIAM

*** * SOCIETY MEMBERS * ***

Chester S. Cadwallader, III, Little Rock
Warren W. Chamberlain, Hot Springs
Ewin S. Chappell, Little Rock
LeMon Clark, Fayetteville
Albert R. Clowney, El Dorado
E. J. Cruse, Black Rock
Peter R. Dornenburg, Little Rock
J. B. Elders, Walnut Ridge
Joseph L. Ellis, Camden
Carney Fitzgibbon, Jr., Little Rock
W. O. Green, Jr., Blytheville
Ulys Jackson, Harrison
Swan B. Moss, McGehee
Roary A. Murchison, Fort Smith
George S. Napper, North Little Rock
Paul S. Read, Fairfield Bay
W. J. Schwarz, Little Rock

*** * AUXILIANS * ***

Mrs. O. L. Bone, Newark
Mrs. Alan Cazort, Little Rock
Mrs. B. L. Church, Sr., North Little Rock
Mrs. A. C. Clark, Little Rock
Mrs. Thomas B. DeClerk, Pocahontas
Mrs. J. K. Donaldson, Fayetteville
Mrs. C. E. Dungan, Augusta
Mrs. Thomas M. Fletcher, Little Rock
Mrs. Marlin B. Hoge, Fort Smith
Mrs. C. E. Kitchens, DeQueen
Mrs. Joe H. Sanderlin, Little Rock
Mrs. W. L. Shippey, Fort Smith
Mrs. Hunter C. Sims, Sr., Blytheville
Mrs. Friedman Sisco, Springdale
Mrs. H. King Wade, Sr., Hot Springs
Mrs. R. H. Whitehead, DeWitt

BLUE CROSS-BLUE SHIELD PARTY

Blue Cross-Blue Shield of Arkansas hosted a cocktail reception for all members and guests on Thursday evening. Mr. H. T. Gardner, Robert Benafield, Mr. Bob Shoptaw, and other officers were present to welcome members of the Society. The Society expresses its appreciation to Blue Cross-Blue Shield for again sponsoring a popular convention activity.

COUNCIL RECEPTION

Chairman of the Council J. Larry Lawson headed a receiving line for the reception hosted

by the Council of the Society on Friday evening, April 19. Other members of the Executive Committee and their spouses making up the receiving line were President Charles F. Wilkins, President-elect John P. Burge, Secretary James R. Weber and Immediate Past President Asa Crow. Members enjoyed the cocktail buffet and the opportunity for visiting with officers of the Society.

API COCKTAIL PARTY

The American Physicians Insurance Exchange sponsored a cocktail party preceding the inaugural banquet on Saturday evening. The Society expresses its appreciation to API for an outstanding party. API officers present included Dick Clark, Bill Meyer, Roger Dietrich, and Kemal Kutait, Jr.

INAUGURAL BANQUET

President Charles F. Wilkins presided at the dinner dance on Saturday evening at which John P. Burge of Lake Village was installed as the 110th president of the Arkansas Medical Society.

Seated at the head table for the dinner were members of the executive committee and their wives and the Speaker of the House of Delegates of the American Medical Association, James E. Davis of Durham, North Carolina.

President Wilkins introduced several guests and officers of the Auxiliary. Included were Mrs. Deno Pappas, immediate past president of the State Auxiliary; Mrs. Jerry Blaylock, president of the State Auxiliary; Mrs. Ramon Lopez, president-elect of the State Auxiliary; Mrs. J. Edward Hill, of Hollandale, Mississippi, president of the Southern Medical Association Auxiliary, and her husband; Mrs. Frank Morgan, North Little Rock, president-elect of the Southern Medical Association Auxiliary; Lois Poliquin, president of the Arkansas State Medical Assistants Society; Harmon Holverson, immediate past president of the American Academy of Family Physicians.

President Wilkins then made a special introduction as follows: At this point, I would like to exercise a personal privilege. After last year's inauguration, Dr. Wally Thomas accused me of getting flustered and forgetting to introduce a very important person. Actually, I felt that George Mitchell had carried out that duty, but in the name of unity, I will make amends. Not many men remember the exact moment they met their fate, but I do. On a sunny October morning in 1938 in Dr. E. A. Provine's freshman chemistry class at Ouachita College, I was asked to recite, but I did not know the answer. Dr. Provine consulted his roll and quizzed Miss Brown. From my left rear, a soft feminine voice gave the correct answer. I peered over my shoulder to see who was the smart aleck and looked directly into the green eyes of a rather pretty blond who smiled in a friendly fashion. Later, we became very good friends as we worked together in the science laboratories at Ouachita. In 1945, following World War II, we married and together headed into my medical training. After 40 years, four children and eight grandchildren, we have decided that we have a lasting relationship. Please join me in recognizing a past president of the Auxiliary, my best friend and partner in life. The girl with all the answers, Joyce Brown Wilkins.

President Wilkins gave recognition to the executive vice president, C. C. Long, who has announced his intention to retire when the Fort Smith headquarters office is closed. Dr. Wilkins expressed appreciation to Dr. Long for his many years of service to the Society. President Wilkins also commended Ken LaMastus and Mike Mitchell and the Little Rock staff of the Society for their work during the legislative session. Dr. Wilkins recognized Leah Richmond for her work in connection with the convention and expressed appreciation to the other members of the Fort Smith staff.

President Wilkins recognized Joe Norton, a past president of the Society and chairman of the Committee on Aging, for introduction of the recipient of the layman award named in honor of Drs. Joe and Elvin Shuffield. Mr. Dewey Lantrip, Health Advocate for the Arkansas Chapter of the American Association of Retired Persons, received the award. Mr. Lantrip was honored for his work with the Arkansas State Medical Board, his cooperation with the Society's Committee on Aging, and his efforts toward cost containment in the health field and other matters concerning care of the aged.

President Wilkins expressed appreciation to the membership for allowing him to serve as the 109th president of the Arkansas Medical Society. He expressed the hope that the convention would close on the same note of unity with which it began.

Dr. Wilkins reminded members that last year, the Society had reinstituted a custom which emphasizes the continuity of medicine from the past to the future. He called the roll of past presidents

who were in attendance and asked them to come to stand with him as he administered the oath of office to the 110th president of the Arkansas Medical Society. He mentioned that "greybreard" has been used to denote a wiseman or elder since time began; the past presidents represent the long line of "greybeards" that stretches back 110 years to W. B. Welch, who was inaugurated in Little Rock in 1875 as the first president of the Arkansas Medical Society. He gave recognition to H. Elvin Shuffield, the deceased "Honorary Past President", the only person to ever be honored with that title. Past presidents in attendance were Joe Verser, C. R. Ellis, Joe Norton, H. W. Thomas, Ross Fowler, Stanley Applegate, Ben Saltzman, A. S. Koenig, Jr., W. Payton Kolb, George F. Wynne, A. E. Andrews, Kemal Kutait, Purcell Smith, Jr., Morriss Henry, and Asa Crow.

The oath of office of the presidency of the Arkansas Medical Society was taken by John P. Burge of Lake Village. Dr. Wilkins presented Dr. Burge with his "President" badge and with the gavel.

President Burge presented a plaque of appreciation to Dr. Wilkins for his year of outstanding service as president of the Arkansas Medical Society.

President Burge recognized Robert Thurlby of the Millard-Henry Clinic. Dr. Thurlby presented a gift from Millard-Henry Clinic to Charles Wilkins with expression of appreciation and esteem from his colleagues at the clinic.

President Burge introduced members of his family who were present. They included his mother, Mrs. John H. Burge; Mr. and Mrs. Tracy Scott, Mrs. Dave Jones, Mr. and Mrs. Robert Schwartz, Mr. and Mrs. John Cope, and his children, John and Davis.

President Burge made his inaugural address. The address is printed elsewhere in this issue.

The Betty Fowler group played for dancing during dinner and dancing continued until midnight.

REORGANIZATIONAL MEETING OF COUNCIL

Following final adjournment of the House of Delegates on Sunday, April 21, the Council held a brief reorganizational meeting. With President John Burge presiding, the Council re-elected J. Larry Lawson as chairman of the Council.

REGISTRATION FIGURES
109th Annual Session

Physicians	346
Medical Students	4
Scientific Exhibitors (non physicians)	20
Technical exhibitors	125
Others	38
	536

SCIENTIFIC EXHIBITS

The Society expresses its thanks to physicians who displayed exhibits and added to the educational benefit of the meeting. Presenting exhibits were:

Dr. Jack L. Blackshear, Little Rock, Arkansas Society of Internal Medicine, "American Society of Internal Medicine"

Becky Butler, Flo Hawks and Margaret Hale, University of Arkansas for Medical Sciences, Arkansas Genetics Program, "Screening Program for Neural Tube Defects"

Cheryl Waller and Julie West, University of Arkansas for Medical Sciences, "Arkansas High Risk Pregnancy Program"

Dr. Ellery C. Gay, Jr., Little Rock, "Cosmetic Surgery and Liposuction Clinic"

Beth Atkinson, Little Rock, Arkansas Medical Society Auxiliary, "Scoliosis Screening in Arkansas"

Dr. Jerry L. Prather and Dr. W. Turner Harris, Radiology Associates, P.A., Little Rock "Indium Leukocyte Imaging in Infectious Disease Process"

Dr. Carl L. Nelson and Dr. Scott Bowen, Department of Orthopaedics, University of Arkansas College of Medicine, "Total Hip Arthroplasty in Jehovah's Witness"

Dr. Donald R. Mattison, Department of Obstetrics and Gynecology, University of Arkansas College of Medicine, "Determinants of Inten-

sity and Contrast in Magnetic Resonance Imaging"

Dr. Bernard W. Thompson, Dr. Robert W. Barnes, M. Lee Nix, Colette MacDonald, and Diane Morgan, The Vascular Lab, Department of Surgery, University of Arkansas College of Medicine, "Noninvasive Vascular Evaluation 1985"

Dr. Robert L. Berry, Little Rock, "Nd-YAG Lasers for Ophthalmology"

Dr. H. Howard Cockrill, Radiology Associates, P. A., Little Rock, "Magnetic Resonance Imaging in a Private Office"

Dr. James R. Morrison and Dr. George A. Norton, Radiology Associates, P.A., Little Rock, "Breast Ultrasound—Early Detection of Breast Cancer"

Dr. Daniel P. Chisholm, Radiology Associates, P.A., Little Rock, "Noninvasive Peripheral Vascular Doppler Examinations"

Dr. Jerry Thomas and Dr. Ted Saer, Arkansas Orthopedic Associates, Little Rock, "Porous Coating Biological Fixation in Total Joint Replacement"

Bill Rodgers, Lea Hyland, Charla Underwood and Ray Tribble, Arkansas Social Services, "Crippled Children's Services"

David Foster and Phyllis Brown, Richard D. Hall Cardiac Learning Foundation, Little Rock, "Harvey—The Cardiopatient Simulator"

Chris Hackler, Ph.D., Head, Division of Medical Humanities, University of Arkansas College of Medicine, "Advance Directives in Medicine: Ethical, Legal and Medical Considerations"

Dr. John R. Mawk, Dr. Joanna Seibert, Sandy Sutterfield and Jerry Pearrow, Department of Neurosurgery, Arkansas Children's Hospital, "Does Routine Use of Intraoperative Ultrasound Assist Shunting Procedures?"

Dr. John R. Mawk, Dr. Joanna Seibert and Dr. James McConnell, Departments of Neurosurgery, Radiology and Pediatrics, Arkansas Children's Hospital and the University of Arkansas College of Medicine, "Evaluation of Cervical Spine Injuries in Children"

Dr. John R. Mawk, Dr. James McConnell and Dr. Steven L. Cathey, Department of Neurosurgery, Arkansas Children's Hospital and the University of Arkansas College of Medicine, "Occult Dysraphism in Children — Identification and Treatment"

Dr. Robert Casali, Dr. C. D. Williams and Dr. Thomas Hoffman, Vascular Labs of Arkansas, Little Rock, "Non-Invasive Evaluation of Peripheral Vascular Disease: Venous and Arterial"

Mr. James L. McFadin, Area Health Education Center Central Office, University of Arkansas College of Medicine, "Area Health Education Centers' Statewide Program"

Dr. George F. Holitik, Dr. Fred Svendsen, Dr. Jesse Clanton and Dr. Les Sessions, St. Vincent Infirmary, Little Rock, and Arkansas Hyperbaric Association, "Hyperbaric Oxygen Therapy"

Dr. Thomas A. Lange, Dr. B. K. Roa and Dr. L. M. Lieberman, Department of Orthopaedic Surgery, University of Arkansas College of Medicine, "Multiple Hereditary Exostosis — A Correlative Study of Radiology, Scintigraphy and Pathology"

Dr. Jerry C. Holton and Dr. Michael F. Knox, Radiology Associates, P. A., Little Rock, "Percutaneous Transluminal Angioplasty"

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY 1985-1986

President	John P. Burge, Post Office Box 788, Lake Village 71653
President-elect	Ken Lilly, 1120 Lexington, Fort Smith 72901
First Vice President	Milton Deneke, Post Office Box 687, West Memphis 72301
Second Vice President	Arthur E. Squire, Jr., 10001 Lile Drive, Little Rock 72205
Third Vice President	Raymond N. Bowman, 619 North Newton, El Dorado 72730
Secretary	James R. Weber, Post Office Box 188, Jacksonville 72076
Treasurer	James M. Kolb, Jr., 305 Skyline Drive, Russellville 72801
Speaker	Amail Chudy, 1801 Maple, North Little Rock 72114
Vice Speaker	Sybil R. Hart, Post Office Box 312, Blytheville 72316
Journal Editor	Alfred Kahn, Jr., 1300 West Sixth, Little Rock 72201

Delegates to AMA	Joe Verser, Post Office Box 106, Harrisburg 72432
	T. E. Townsend, 1420 West 43rd, Pine Bluff 71603
	A. E. Andrews, 1311 Rio Grande, Texarkana 75503
Alternates	Richard N. Pearson, 6 Halsted Circle, Rogers 72756
	W. Payton Kolb, 230 Medical Towers Bldg., Little Rock 72205
	George W. Warren, Post Office Box W, Smackover 71762

EXECUTIVE COMMITTEE OF THE COUNCIL

Chairman of the Council	J. Larry Lawson, #1 Medical Drive, Paragould 72450
President	John P. Burge, Post Office Box 788, Lake Village 71653
President-elect	Ken Lilly, 1120 Lexington, Fort Smith 72901
Secretary	James R. Weber, Post Office Box 188, Jacksonville 72076
Immediate Past President	Charles F. Wilkins, Jr., 3105 W. Main Place, Russellville 72801

COUNCILORS

District	Term Expires 1986	Term Expires 1987	Counties in District	
1.	J. Larry Lawson #1 Medical Drive Paragould 72450	*Merrill J. Osborne 10th and Highland Blytheville 72315	Clay, Craighead, Crittenden, Fulton, Green, Lawrence, Mississippi, Poinsett, Randolph, and Sharp	
2.	*John E. Bell 1300 South Main Searcy 72143	Jim E. Lytle P. O. Box 2116 Batesville 72501	Cleburne, Conway, Faulkner, Independence, Izard, Jackson, Stone, and White	
3.	*L. J. P. Bell 626 Poplar Helena 72342	John Hestir P. O. Drawer 512 DeWitt 72042	Arkansas, Cross, Lee, Lonoke, Monroe, Phillips, Prairie, St. Francis and Woodruff	
4.	Paul A. Wallick 906 Roberts Drive Monticello 71655	*Lloyd G. Langston P. O. Box 1550 Pine Bluff 71613	Ashley, Chicot, Desha, Drew, Jefferson, and Lincoln	
5.	Cal R. Sanders P. O. Box 757 Camden 71701	*George Warren P. O. Box W Smackover 71762	Bradley, Calhoun, Cleveland, Columbia, Dallas, Ouachita, and Union	
6.	James D. Armstrong P. O. Box 637 Ashdown 71822	*F. E. Joyce P. O. Box 2763 Texarkana 75504	Hempstead, Howard, Lafayette, Little River, Miller, Nevada, Pike, Polk, and Sevier	
7.	*Ronald J. Bracken 505 West Grand Hot Springs 71901	Edgar K. Clardy P. O. Box 850 Hot Springs 71902	Clark, Garland, Grant, Hot Spring, Montgomery, and Saline	
8.	William N. Jones (1986) 500 S. University Little Rock 72205 Frank E. Morgan (1986) 410 West Pershing Blvd. North Little Rock 72114	Harold Purdy (1986) 6924 Geyer Springs Road Little Rock 72209 *W. Ray Jouett (1987) 750 Medical Towers Bldg. Little Rock 72205	Charles Logan (1987) 500 South University Little Rock 72205	Pulaski
9.	Robert H. Langston 520 North Spring Harrison 72601	*Richard N. Pearson 6 Halsted Circle Rogers 72756	Baxter, Benton, Boone, Carroll, Madison, Marion, Newton, Searcy, Van Buren, and Washington	
10.	Morton C. Wilson 1500 Dodson Fort Smith 72901	*W. P. Phillips P. O. Box 3507 Fort Smith 72913	Crawford, Franklin, Johnson, Logan, Perry, Pope, Scott, Sebastian, and Yell	

*Senior Councilor

COMMITTEES — ARKANSAS MEDICAL SOCIETY — 1985-86

COMMITTEES APPOINTED BY SOCIETY PRESIDENT

	Term Expires
COMMITTEE ON CANCER CONTROL	
Joe B. Crumpler, Jr., 3105 West Main Place, Russellville 72801 — *CHAIRMAN*	1987
Ronald D. Hardin, 107 Medical Towers Building, Little Rock 72205	1987
Jean C. Gladden, Post Office Box 1118, Harrison 72601	1987
James Bledsoe, 6 Halsted Circle, Rogers 72756	1988
Jerry Morgan, Route 1, Box 21-D, Stuttgart 72160	1988
Peyton E. Rice, 2000 Fendley Drive, North Little Rock 72114	1988
John K. Sigler, Jr., 923 Lexington, Fort Smith 72901	1988
Robert H. Janes, Jr., 1500 Dodson, Fort Smith 72901	1988
COMMITTEE ON MEDICAL LEGISLATION	
Morriss M. Henry, 204 South East Street, Fayetteville 72701	1986
Charles H. Rodgers, 4202 South University, Little Rock 72204	1986
James R. Weber, Post Office Box 188, Jacksonville 72076 — *CHAIRMAN*	1987
Joe Verser, Post Office Box 106, Harrisburg 72432	1987
Richard K. Lovell, 510 Hilltop Drive, Russellville 72801	1987
Marvin Leibovich, 9600 West 12th, Little Rock 72205	1987
Don Howard, 110 North Clifton, Fordyce 71742	1987
Kelly Meyer, Professional Park Bld, #8, Russellville 72801	1987
James L. Maupin, Post Office Box 2607, Fort Smith 72902	1987
W. Payton Kolb, 230 Medical Towers Building, Little Rock 72205	1988
Wayne G. Elliott, 443 West Oak, El Dorado 71730	1988
Ralph F. Joseph, Post Office Box 109, Walnut Ridge 72476	1988
Merrill J. Osborne, 10th and Highland, Blytheville 72315	1988
Ex-Officio Member: Auxiliary Legislative Chairman: Mrs. W. Payton Kolb, 224 Colonial Court, Little Rock 72205	
SUB-COMMITTEE ON NATIONAL LEGISLATION	
W. Payton Kolb, 230 Medical Towers Building, Little Rock 72205	1986
George W. Warren, Post Office Box "W", Smackover 71762	1986
Rhys A. Williams, Post Office Box 1118, Harrison 72602	1987
James M. Kolb, Jr., 305 Skyline Drive, Russellville 72801	1987
Asa A. Crow, #1 Medical Drive, Paragould 72450 — CHAIRMAN	1987
W. P. (Pat) Phillips, Post Office Box 3507, Fort Smith 72913	1988
Kelly Meyer, Professional Park Bld, #8, Russellville 72801	1988
Charles H. Rodgers, 4202 South University, Little Rock 72204	1988
William E. Golden, 4301 W. Markham, Slot 641, Little Rock 72201	1988
COMMITTEE ON PUBLIC HEALTH	
Don Howard, 110 Clifton, Fordyce 71742 — *CHAIRMAN*	1986
William C. Whaley, Jr., 205 East Church, Warren 71671	1987
Wilbur G. Lawson, 207 East Dickson, Fayetteville 72701	1987
John A. Hall, Post Office Box 310, Clinton 72031	1987
Ben N. Saltzman, 4815 West Markham, Little Rock 72205	1988
Rex Ramsay, Post Office Box 300, Bauxite 72011	1988
SUB-COMMITTEE ON MATERIAL AND CHILD WELFARE	
Robert H. Fiser, Jr., 1721 Maryland, Little Rock 72202 — *CHAIRMAN*	1987
Calvin Bracy, 1301 West 43rd, Pine Bluff 71603	1987
Rufus Thrower, Jr., 1601 South University, Little Rock 72204	1987
E. A. Shaneyfelt, Post Office Box 630, Manila 72442	1988
Rex Ramsay, Post Office Box 300, Bauxite 72011	1988
Frank C. Miller, 4301 W. Markham, Slot 518, Little Rock 72201	1988
W. Wayne Workman, 527 North 6th, Blytheville 72315	1988
COMMITTEE ON CONTINUING MEDICAL EDUCATION	
Thomas A. Bruce, 4301 West Markham, Slot 550, Little Rock 72201 — UACM	1986
J. Larry Lawson, #1 Medical Drive, Paragould 72450 — AC, ACS	1986
Allan S. Pirnique, 714 West Faulkner, El Dorado 71730 — ACP	1986
Leslie F. Anderson, 1310 North Center, Lonoke 72086 — AAFP	1986
Sybil Hart, Post Office Box 312, Blytheville 72316 — OS (PATH)	1987
James G. Burgess, Post Office Box 1647, Russellville 72801 — OS (RAD)	1987
John M. Hestir, Post Office Drawer 512, DeWitt 72042 — *CHAIRMAN* — FP	1988

	Term Expires
COMMITTEE ON HOSPITALS	
Richard O. Martin, Post Office Box 339, Paragould 72450	1986
Gerald A. Stolz, Jr., Post Office Box 925, Russellville 72801	1987
Robert E. Elliott, 1300 South Main, Searcy 72143	1987
Don Howard, 110 North Clifton, Fordyce 71742	1987
Robert B. Benafield, Post Office Box 2181, Little Rock 72203	1988
G. Max Thorn, #1 St. Vincent Circle, Little Rock 72205 — *CHAIRMAN*	1988
Rhys A. Williams, Post Office Box 1118, Harrison 72601	1988
Ralph G. Kramer, 603 Lexington, Fort Smith 72901	1988
COMMITTEE ON PUBLIC RELATIONS	
W. Ray Jouett, 750 Medical Towers Building, Little Rock 72205	1986
Milton D. Deneke, Post Office Box 687, West Memphis 72301 — *CHAIRMAN*	1986
Ronald Bracken, 505 West Grand, Hot Springs 71901	1986
A. C. Bradford, Post Office Box 3528, Fort Smith 72913	1987
Eugene F. Still, II, 1500 Dodson, Fort Smith 72901	1987
William H. Riley, 4202 South University, Little Rock 72204	1987
J. E. McDonald, II, 461 East Township, Fayetteville 72701	1987
T. E. Townsend, 1420 West 43rd, Pine Bluff 71603	1988
Raymond V. Biondo, Post Office Box 921, North Little Rock 72115	1988
Charles Logan, 500 South University, Little Rock 72205	1988
Rufus Thrower, Jr., 1601 South University, Little Rock 72204	1988
Jill Hankins (Medical Student), 314 South Oak, Little Rock 72205	1986
Ex-Officio Members:	
Auxiliary President, Mrs. Jerry Blaylock, 2210 Twin Oaks, Jonesboro 72401	
Auxiliary Publicity Committee Chairman, Mrs. Gordon Oates, 485 Valley Club Circle, Little Rock 72212	
SUB-COMMITTEE ON LIAISON WITH AUXILIARY	
Asa Crow, #1 Medical Dirve, Paragould 72450	1986
Jerry D. Blaylock, 901 South Church, Jonesboro 72401 — *CHAIRMAN*	1986
Milton D. Deneke, Post Office Box 687, West Memphis 72301	1987
J. Larry Lawson, #1 Medical Drive, Paragould 72450	1987
Ramon Lopez, 1902 McLain, Newport 72112	1988
Deno P. Pappas, 101 Whittington, Hot Springs 71901	1988

	Term Expires
SUB-COMMITTEE ON STATE HEALTH AND MEDICAL RESOURCES FOR CIVIL DEFENSE	
Joe H. Stallings, 417 East Matthews, Jonesboro 72401	1986
Alvin Strauss, Jr., 1026 Donaghey Building, Little Rock 72201	1987
Marvin Leibovich, 9600 West 12th, Little Rock 72205 — *CHAIRMAN*	1987
Glenn V. Dalrymple, 1100 Medical Towers Building, Little Rock 72205	1988
Charles H. Rodgers, 4202 South University, Little Rock 72204	1988
SUB-COMMITTEE ON LIAISON WITH VOCATIONAL REHABILITATION	
Robert D. Miller, Jr., 616 Elm Street, Helena 72342 — *CHAIRMAN*	1986
T. E. Townsend, 1420 West 43rd, Pine Bluff 71603	1986
W. Ray Jouett, 750 Medical Towers Building, Little Rock 72205	1987
Henrik Madsen, II, 311 Whittington, Hot Springs 71901	1987
Karlton H. Kemp, 408 Hazel, Texarkana 75502	1988
Ramon Lopez, 1902 McLain, Newport 72112	1988
ANNUAL SESSION COMMITTEE	
James L. Gardner, 125 Greenwood, Hot Springs 71901 — *CHAIRMAN*	1986
Thomas A. Bruce, 4301 West Markham, Slot 550, Little Rock 72201	1987
Kelsy Caplinger, 11215 Hermitage, Little Rock 72211	1987
Ronald J. Bracken, 505 West Grand, Hot Springs 71901	1987
Charles H. Rodgers, 4202 South University, Little Rock 72204	1987
Peter Kohler, 4301 West Markham, Slot 640, Little Rock 72201	1987
Jack L. Blackshear, 650 Medical Towers Building, Little Rock 72205	1988
John Crenshaw, 4201 Mulberry, Pine Bluff 71603	1988
Richard O. Martin, Post Office Box 339, Paragould 72450	1988
Ken Lilly, 1120 Lexington, Fort Smith 72901	1988
Ex-Officio Members—Auxiliary Convention Chairman: Mrs. Robert Valentine, 26 Heritage Park Circle, North Little Rock 72116	
Mrs. James R. Weber, Post Office Box 484, Jacksonville 72076	
COMMITTEE ON INSURANCE	
John Crenshaw, 4201 Mulberry, Pine Bluff 71603	1987
James L. Gardner, 125 Greenwood, Hot Springs 71901	1987
Eugene F. Still, II, 1500 Dodson, Fort Smith 72901 — *CHAIRMAN*	1987
Jack L. Blackshear, 650 Medical Towers Building, Little Rock 72205	1987

	Term Expires
Guy Farris, Jr., 6213 Lee Avenue, Little Rock 72205	1988
Danny T. Berry, Post Office Box 788, Lake Village 71653	1988
Peter Irwin, 1500 Dodson, Fort Smith 72901	1988
Rhys A. Williams, Post Office Box 1118, Harrison 72601	1988
Mr. Ben Jensen, Holt-Krock Clinic, 1500 Dodson, Fort Smith 72901 (Advisory)	
COMMITTEE ON MEDICINE AND RELIGION	
Walter H. O'Neal, 9601 Interstate 630, Little Rock 72205 — *CHAIRMAN*	1986
C. R. Ellis, 1004 South Main, Malvern 72104	1987
Randolph Murphy, 708 West Second, Little Rock 72201	1987
George Schroeder, 260 Doctors Park Building, Little Rock 72205	1987
Milton D. Deneke, Post Office Box 687, West Memphis 72301	1987
James L. Maupin, Post Office Box 2607, Fort Smith 72902	1988
James O. Pennington, Post Office Box 68, Ola 72853	1988
Fred O. Henker, III, 4301 W. Markham, Little Rock 72201	1988
COMMITTEE ON AGING	
Henry V. Kirby, 825 North Spring, Harrison 72601	1986
E. Clinton Texter, 4301 West Markham, Slot 567, Little Rock 72201	1987
Carlos A. Araoz, #1 St. Vincent Circle, Suite 220, Little Rock 72205	1987
Ross E. Fowler, 215 West Stephenson, Harrison 72601	1987
T. E. Townsend, 1420 West 43rd, Pine Bluff 71603	1987
Joe Norton, 8570 Cantrell, Little Rock 72207 — *CHAIRMAN*	1988
Morton C. Wilson, 1500 Dodson, Fort Smith 72901	1988
Frances Rothert, Benedictine Manor, Hot Springs 71914	1988
Tom Eans, 1709 West Main, Heber Springs 72543	1988
COMMITTEE ON MENTAL HEALTH	
Aubrey C. Smith, #1 St. Vincent Circle, #260, Little Rock 72205 — *CHAIRMAN*	1987
W. Payton Kolb, 230 Medical Towers Building, Little Rock 72205	1987
William Joe James, Post Office Box 1019, Pine Bluff 71613	1987
Eugene H. Ball, Route 2, Box 53, Rogers 72756	1987
T. Stuart Harris, 21 Bridgeway Road, North Little Rock 72118	1988
Henry H. Good, #1 St. Vincent Circle, Suite #340, Little Rock 72205	1988
Jerry Blaylock, 901 S. Church, Jonesboro 72401	1988

COMMITTEES APPOINTED BY COUNCIL

	Term Expires
COMMITTEE ON POSITION PAPERS	
Lloyd Langston, Post Office Box 1550, Pine Bluff 71613	1986
Paul Cornell, 500 South University, Little Rock 72205	1986
Kemal Kutait, 1120 Lexington, Fort Smith 72901	1986
James M. Kolb, Jr., 305 Skyline Drive, Russellville 72801 — *CHAIRMAN*	1987
Neil Sims, 4301 West Markham, Little Rock 72201	1987
George W. Warren, Post Office Box W, Smackover 71762	1987
W. Payton Kolk, 230 Medical Towers Building, Little Rock 72205	1987
James R. Weber, Post Office Box 188, Jacksonville 72076	1987
Thomas A. Bruce, 4301 West Markham, Slot 550, Little Rock 72201	1987
Carl J. Raque, 500 South University, Little Rock 72205	1988
David Busby, 100 South 14th, Fort Smith 72901	1988
Allan S. Pirnique, 714 West Faulkner, El Dorado 71730	1988
Jan T. Turley, #2 Halsted Circle, Rogers 72756	1988
BUDGET COMMITTEE	Dec. 31
Jim E. Lytle, Post Office Box 2116, Batesville 72501 — *CHAIRMAN*	1985
F. E. Joyce, Post Office Box 2763, Texarkana 75504	1986
Lloyd Langston, Post Office Box 1550, Pine Bluff 71613	1987
Frank Morgan, 410 West Pershing Blvd., North Little Rock 72114	1988
James M. Kolb, Jr., 305 Skyline Drive, Russellville 72801	Automatic as Treasurer
COMMITTEE ON CONSTITUTIONAL REVISION	
A. S. Koenig, Jr., 2122 South W, Fort Smith 72901 — *CHAIRMAN*	
J. Warren Murry, Post Office Drawer A, Fayetteville 72702	
Nathan L. Poff, Post Office Box 1111, Heber Springs 72543	
MEDICAL SCHOOL COMMITTEE	
James L. Gardner, 125 Greenwood, Hot Springs 71901 — *CHAIRMAN*	
Kemal Kutait, 1120 Lexington, Fort Smith 72901	
Boyce West, Post Office Box 220, Clarksville 72830	
Max G. Cheney, Post Office Box 725, Mountain Home 72653	
R. Jerry Mann, 6924 Geyer Springs Road, Little Rock 72209	
LIAISON COMMITTEE WITH STATE WELFARE DEPARTMENT (Composed of Executive Committee)	

AD HOC COMMITTEE TO EXECUTIVE COMMITTEE ON LIAISON WITH STATE DEPARTMENTS OF HEALTH AND HUMAN SERVICES

Larry D. Wright, Post Office Box 1000, Rogers 72756 — *CHAIRMAN*
Milton D. Deneke, Post Office Box 687, West Memphis 72301
George W. Warren, Post Office Box W, Smackover 71762
Michael N. Moody, Post Office Box 829, Salem 72576

PHYSICIAN-NURSE JOINT PRACTICE COMMITTEE

Jerry Holton, 500 South University, Little Rock 72205
A. T. Gillespie, 500 South University, Little Rock 72205
Charles W. Logan, 500 South University, Little Rock 72205
Kemal Kutait, 1120 Lexington, Fort Smith 72901
Charles F. Wilkins, 3105 West Main Place, Russellville 72801 — *CHAIRMAN*

COST EFFECTIVENESS COMMITTEE	Term Expires
Charles F. Wilkins, Jr., 3105 West Main Place, Russellville 72801	1986
Morriss Henry, 204 South East Street, Fayetteville 72701	1986
Joseph C. Stainton, 416 East Washington, Jonesboro 72401	1986
Robert D. Fisher, 1500 Dodson, Fort Smith 72901	1986
Cal R. Sanders, Post Office Box 757, Camden 71701 — *CHAIRMAN*	1987
William H. Riley, 4202 South University, Little Rock 72204	1987
Milton Deneke, Post Office Box 687, West Memphis 72301	1987
Roger Cagle, #1 Medical Drive, Paragould 72450	1987
Robert B. Clark, 328 Quapaw, Hot Springs 71901	1987
John Crenshaw, 4201 Mulberry, Pine Bluff 71603	1988
Kemal Kutait, 1120 Lexington, Fort Smith 72901	1988
C. G. Melton, 10th and Highland, Blytheville 72315	1988

IMPAIRED PHYSICIANS COMMITTEE

Lee B. Parker, Jr., 241 West Spring, Fayetteville 72701
Aubrey C. Smith, #1 St. Vincent Circle, Suite 260, Little Rock 72205 — *CHAIRMAN*
Glen F. Baker, 4301 West Markham, Little Rock 72201
B. P. Raney, 403 East Matthews, Jonesboro 72401
J. L. Martindale, 302 West South, Benton 72015

COUNCIL APPOINTED BOARDS AND COMMISSIONS

ARKANSAS MEDICAL SOCIETY, PENSION PLAN TRUSTEES	Term Expires April
Kemal Kutait, 1120 Lexington, Fort Smith 72901 — *CHAIRMAN*	1985
James R. Weber, Post Office Box 188, Jacksonville 72076	1986
Charles Logan, 500 South University, Little Rock 72205	1987
Rhys A. Williams, Post Office Box 1118, Harrison 72601	1988
James M. Kolb, Jr., 305 Skyline Drive, Russellville 72801	Automatic as Treasurer
Ex-Officio Member	
C. C. Long, Post Office Box 1208, Fort Smith 72902	

MEDICAL EDUCATION FOUNDATION FOR ARKANSAS (M.E.F.F.A.)	Term Expires August
Amail Chudy, 1801 Maple, North Little Rock 72114 — *Vice President*	1986
Jean Gladden, Post Office Box 1118, Harrison 72601 — *Secretary*	1987
Martin Eisele, 101 Whittington, Hot Springs 71901 — *President*	1988
W. Ray Jouett, 750 Medical Towers Building, Little Rock 72205	1989
Ex-Officio (with voting power)	
John P. Burge, Post Office Box 788, Lake Village 71653 (President, AMS)	
Ken Lilly, 1120 Lexington, Fort Smith 72901 (President-Elect, AMS)	
Charles F. Wilkins, Jr., 3801 W. Main Pl., Russellville 72801 (Immediate Past President, AMS)	
Thomas A. Bruce, 4301 West Markham, Little Rock 72201 (Dean, University of Arkansas College of Medicine)	

ARKANSAS STATE ARBITRATION COMMISSION (Society of Representatives)		Term Expires April
District		
1	Milton D. Deneka, Post Office Box 687, West Memphis 72301	1987
2	Kenneth Meacham, 1300 South Main, Searcy 72143	1986
3	Dwight Gray, 110 West Chestnut, Marianna 72360	1986
4	Banks Blackwell, Post Office Box 1406, Pine Bluff 71613	1987
5	James Guthrie, Post Office Box 757, Camden 71701	1989
6	Joe D. King, Post Office Box 549, Nashville 71852	1990
7	Thomas M. Durham, 505 West Grand, Hot Springs 71901	1987
8	H. Austin Grimes, Post Office Box 5270, Little Rock 72215 — *CHAIRMAN*	1987
9	John W. Vinzant, 22 East Spring, Fayetteville 72701	1989
10	James Maupin, Post Office Box 337, Dardanelle 72834	1990

ARKANSAS MEDICAL SOCIETY
POLITICAL ACTION COMMITTEE

John M. Hestir, Post Office Drawer 512, DeWitt 72042 — *CHAIRMAN*
Charles H. Rodgers, 4202 South University, Little Rock 72204 — *TREASURER*
John Crenshaw, 4201 Mulberry, Pine Bluff 71603
Robert Miller, 616 Elm, Helena 72342
Ken Lilly, 1120 Lexington, Fort Smith 72901
James M. Kolb, Jr., 305 Skyline Drive, Russellville 72801
A. Samuel Koenig, III, 2420 Rogers, Fort Smith 72901
Milton D. Deneke, Post Office Box 687, West Memphis 72301
Roger Cagle, #1 Medical Drive, Paragould 72450
Richard Martin, Post Office Box 339, Paragould 72450
John Giller, 705 West Faulkner, El Dorado 71730
Paul Meredith, Post Office Box 1409, Texarkana 75504
Daniel S. Davidson, 1300 South Main, Searcy 72143
C. G. Melton, 10th and Highland, Blytheville 72315
Robert Langston, 520 N. Spring, Harrison 72601
Joe H. Stallings, Jr., 417 East Matthews, Jonesboro 72401
Mrs. Ramon Lopez, 2008 Fairground Road, Newport 72112
Mrs. J. E. McDon[illegible], 1143 West Lakeridge, Fayetteville 72701
Mrs. Herbert Taylo[illegible] Tournament, West Memphis 72[illegible]
Mrs. C. Lynn Harris, 1516 Wilson Drive, Hope 71801

ARKANSAS MEDICAL SOCIETY
LEGISLATIVE FUND

James R. Weber, Post Office Box 188, Jacksonville 72076
Asa A. Crow, #1 Medical Drive, Paragould 72450
W. Payton Kolb, 230 Medical Towers Building, Little Rock 72205
Ex-Officio member:
John P. Burge, Post Office Box 188, Lake Village 71653

COUNCIL AD HOC COMMITTEES

INFORMED CONSENT COMMITTEE

J. Larry Lawson, #1 Medical Drive, Paragould 72450 — *CHAIRMAN*
John Broadwater, 1500 Dodson, Fort Smith 72901
James R. Weber, Post Office Box 188, Jacksonville 72076
W. P. Phillips, Post Office Box 3507, Fort Smith 72913
Bill Tranum, 500 South University, Suite 401, Little Rock 72205
S. Killeen DesLauriers, 880 Medical Towers Building, Little Rock 72205
Robert H. Janes, 1500 Dodson, Fort Smith 72901

RESIDENT PHYSICIAN COMMITTEE

Warren Boop, 4301 West Markham, Little Rock 72201 — *CHAIRMAN*
Amail Chudy, 1801 Maple, North Little Rock 72114
James Cornett, 5326 West Markham, Little Rock 72205

BUILDING COMMITTEE

Lloyd G. Langston, Post Office Box 1150, Pine Bluff 71613 — *CHAIRMAN*
Joseph A. Norton, 8570 Cantrell Road, Little Rock 72207
Charles W. Logan, 500 South University, Little Rock 72205

COMMITTEES ELECTED BY THE HOUSE OF DELEGATES

NOMINATING COMMITTEE — Term Expires April 1986

Councilor District

1 James M. Robinette, 801 Osler Drive, Jonesboro 72401
2 Ramon E. Lopez, 1209 McClain, Newport 72112
3 John M. Hestir, Post Office Drawer 512, DeWitt 72042
4 Paul Wallick, 906 Roberts Drive, Monticello 71655
5 John L. Ruff, 104 Hospital Road, Magnolia 71753
6 James Armstrong, Post Office Box 637, Ashdown 71822 — *CHAIRMAN*
7 J. Richard Gardial, 125 Greenwood, Hot Springs 71901
8 Frank E. Morgan, 410 West Pershing, North Little Rock 72114
9 Lee B. Parker, Jr., 241 West Spring, Fayetteville 72701
10 W. P. Phillips, Post Office Box 3507, Fort Smith 72913

MEDICAL SERVICES REVIEW COMMITTEE

Term Expires April 30	Committee Member (Name and Address)	Specialty Represented
1987	R. Jerry Mann, 6924 Geyer Springs Road, Little Rock 72209	Fam. Pr.
1988	Wendell Ross, 1120 Lexington, Fort Smith 72901	Fam. Pr.
1988	Richard Gardial, 125 Greenwood, Hot Springs 71901	Fam. Pr.
1987	David Crittenden, 100-A East Poplar, Fayetteville 72701	Int. Med.
1988	John Schultz, 10001 Lile Drive, Little Rock 72205	Int. Med.
1987	James A. Simpson, 1300 South Main, Searcy 72143	Surgery
1986	Glenn P. Schoettle, 308 South Rhodes, West Memphis 72301	Surgery
1988	Hugh F. Burnett, 990 Medical Towers Bldg., Little Rock 72205	Surgery
1986	Vida H. Gordon, 9900 Treasure Hill, Little Rock 72205	Allergy
1988	Robert Fisher, 1500 Dodson, Fort Smith 72901	Anes.
1986	William W. Galloway, 1602 West Main, Russellville 72801	Derm.
1986	Dwayne L. Ruggles, 520 West 26th, North Little Rock 72114	Oto.
1986	Mitchell Singleton, Post Office Box 908, Fayetteville 72702	Oph.
1987	A. Tharp Gillespie, 500 South University, Little Rock 72205	Ob-Gyn
1988	W. Ray Jouett, 750 Medical Towers Building, Little Rock 72205	Neurosurgery
1988	Henry Good, #1 St. Vincent Circle, #340, Little Rock 72205	Psychiatry
1987	John Trieschmann, Post Office Box 2458, Hot Springs 71913	Pediatrics
1986	A. E. Andrews, Post Office Box 689, Texarkana 75504	Radiology
1987	Frederick E. Joyce, Post Office Box 2763, Texarkana 75504	Pathology
1987	Robert H. May, Jr., 305 Skyline Drive, Russellville 72801	Orthopedics
1988	Morton Wilson, 1500 Dodson, Fort Smith 72901	Urology
—	Charles H. Rodgers, 4202 South University, Little Rock 72204	(Chairman)
—	John Crenshaw, 4201 Mulberry, Pine Bluff 71603	(Vice Chairman)
—	John P. Burge, Post Office Box 788, Lake Village 71653	(President)
—	Ken Lilly, 1120 Lexington, Fort Smith 72901	(President-elect)
—	James R. Weber, Post Office Box 188, Jacksonville 72076	(Secretary)
—	J. Larry Lawson, #1 Medical Drive, Paragould 72450	(Council Chairman)
—	Charles F. Wilkins, Jr., 3105 West Main Place, Russellville 72801	(Immediate Past President)

SUB-COMMITTEE OF SUB-SPECIALTIES

(Representatives on call to meet with Committee as needed when claims in specialty field are considered)

Term Expires April 30	Sub-Committee Representative (Name and Address)	Sub-Specialty Represented
	Carl L. Williams, 522 South 16th, Fort Smith 72901	Thoracic Surgery
	Thomas J. Smith, 409 North University, Little Rock 72205	Gastroenterology
	Thomas H. Allen, 413 North University, Little Rock 72205	Plastic Surgery
	John C. Shultz, 10001 Lile Drive, Little Rock 72205	Pulmonary Dis.
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Mrs. Jerry Blaylock

President 1985-1986

Arkansas Medical Society Auxiliary

Arkansas Medical Society Auxiliary

Convention Report

On Thursday, April 18, a Pre-Convention Board meeting was held, which was followed by an exchange workshop for all officers and committee chairmen.

On Friday, April 19, the Opening General Session was presided over by President Gwen Pappas. The address was given by Mrs. Mylie E. Durham, Secretary of the American Medical Association Auxiliary. Reports were given by officers and committee chairmen. Delegates were elected to attend the AMA Convention in Chicago. They were Gwen Pappas, Ginny Blaylock, Esther Lopez and Judi McGuire.

Brunch was held in the Ballroom of the Arlington Hotel. Entertainment was a style show presented by the Arlington Gown Shop. The following awards were presented: AMA-ERF, Washington County; Membership Awards went to Independence County, Jackson County and Garland County; Doctor's Day Awards went to Craighead-Poinsett County and Baxter County, and the Vinnie Garrison Award went to Crittenden County.

On Saturday, April 20, a Membership Committee workshop was held and Mrs. Mylie Durham was present to give suggestions and answer questions. Also a Past President's breakfast was held.

The Second General Session was called to order at 9:30 a.m. by President Gwen Pappas. Reports were given by county presidents on events and activities of the past year. Officers were elected for 1985-86. They were: President, Ginny Blaylock; President-elect, Esther Lopez; Recording Secretary, Shirley Basinger; Treasurer, Bridget Kincheloe; Northeast Vice President, Alice Lytle; Northwest Vice President, Annette Phillips; Southeast Vice President, Brenda Gullett, and Southwest Vice President, Mary Gardner. The meeting was highlighted by an address by Mrs. J. Edward Hill, President, Southern Medical Association Auxiliary.

A luncheon was held at the Majestic Hotel. The guest speaker was Mrs. Hillary Rodham Clinton, First Lady of Arkansas. The installation of officers was done by Mrs. Kemal Kutait. Mrs. Gwen Pappas presented the President's pin to the new President, Mrs. Ginny Blaylock. Mrs. Pappas was presented the Past President's pin by Mrs. Bonnie Peeples. Mrs. Ginny Blaylock gave her inaugural address.

On Sunday, April 21, a Post Convention Board meeting was presided over by Mrs. Ginny Blaylock. New officers, chairmen, county presidents and presidents-elect attended.



PAST PRESIDENTS OF THE ARKANSAS MEDICAL SOCIETY AUXILIARY

(Seated, left to right) Mrs. Warren Boop, Mrs. John McCollough Smith, Mrs. Louis Hundley, Mrs. C. W. Jones, (standing, left to right) Mrs. Walter Mizell, Mrs. Frank Morgan, Mrs. A. S. Koenig, Mrs Carl Parkerson, Mrs. Charles Wilkins, Mrs. Lynn Harris, Mrs. Harold Langston, Mrs. Frank Padberg, Mrs. Paul Cornell, Mrs. Kemal Kutait, Mrs. Herbert Taylor, Mrs. Curry Bradburn, Mrs. Gordon Oates, and Mrs. Raymond Peeples.



Mrs. Deno Pappas, 1984-85 Auxiliary President.



Mrs. Pappas with Mrs. Mylie Durham, Secretary of the AMA Auxiliary.



Mrs. Jerry Blaylock, 1985-86 Auxiliary President.



Mrs. Pappas with Mrs. J. Edward Hill, President of the Southern Medical Association Auxiliary.












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Opportunities to Practice Medicine in Arkansas

MOUNTAIN HOME. Opportunities exist in neurosurgery, family practice and ophthalmology. Most specialties both medical and surgical are represented in Mountain Home. Various financial incentives are available to physicians to relieve the pressure and burden of beginning a medical practice. The community is served by the Baxter County Regional Hospital, Inc., which has J.C.A.H. accreditation. The hospital has an active medical staff of 32 physicians and is a progressive institution not only in philosophy but in physical structure. Approval has been given to expand the 97-bed facility to approximately 135. Mountain Home and Baxter County are located in the Ozark Mountains in Northcentral Arkansas and have populations of approximately 10,000 and 29,000 respectively. Baxter County is the number one county in growth in population the last ten years with a 102% increase. During the winter months the trade population of the region is approximately 70,000 which soars to over 100,000 during the peak vacation periods.

OSCEOLA. Opportunities exist for physicians in the fields of obstetrics, gynecology, orthopaedic surgery, otorhinolaryngology and urology. Incoming physicians are provided with personnel, equipment, exam furniture, office furniture, expendables, health and professional liability insurance, accounting and collections, tax and investment advice and much more. There is no investment and a substantial guaranteed income is provided. The Mississippi County Hospital is currently involved in a program to construct new office facilities adjacent to the hospital, specifically designed for the individual practitioner. Each site will have a physician's office and at least three fully equipped examination rooms. By locating the facility adjacent to Osceola Memorial Hospital, the finest in patient care, convenience, and equipment is provided. There are presently 9 physicians practicing full-time in Osceola with an additional five courtesy staff members representing specialty service. Located in northeast Arkansas, Osceola and Mississippi County have a population of 9,000 and 58,000 respectively. The trade area is a conservative 40,000.

BRINKLEY. Opportunities exist in Brinkley in family practice and internal medicine. Population 5,700; service area population 30,000. Brinkley is located on Interstate 40 midway between Little Rock and Memphis, Tennessee. The offering includes a guaranteed income for the first year at professional rates competitive with Little Rock and Memphis. Moving expenses will also be paid. Currently there are five family or general practice physicians located in Brinkley. The Delta Medical Center was acquired by Community Care Systems, Inc., in 1983. A 28-bed nursing home is at the same location. The hospital serves the residents of Brinkley and draws patients from the entire county as well as parts of Prairie, St. Francis, Woodruff, and Lee Counties.

JONESBORO-TRUMANN. Opportunities exist for a family or general practitioner and a general surgeon to associate with an extremely busy two-man group practice in a 6,000 square foot clinic located in a new office complex. An excellent salary and fringe benefits are provided. There is also a satellite office in Trumann. Both of the locations are equipped with the most modern diagnostic equipment including complete labortory, x-ray with ultrasound, viagraph with treadmill stress testing, echocardiogram, Holter monitor and computerized pumonary function equipment. Population aproximately 32,000; county population 53,000. There are approximately 100 practicing physicians in Jonesboro with all specialties represented. There is a 300-bed general hospital and a 100-bed hospital in the city. Jonesboro is the medical center for northeast Arkansas with a drawing area of about 250,000 people.

YELLVILLE. Opportunities exist in the fields of family practice, general surgery, internal medicine, obstetrics/gynecology and pediatrics. There is a guaranteed income the first year at professional rates competitive with Little Rock and Memphis, Tennessee. The area is served by the Central Ozarks Medical Center which is a modern 59-bed community hospital. Since June 1982, Central Ozarks Medical Center has been managed under a long-term lease by Community Care Systems, Inc., of Boston. Major renovation and new physicians have been added since 1982 to bring quality patient care to the community. The hospital has 4 ICU/,CCU beds, a new 3-bed emergency room and a 2 room operating suite. The hospital also has up-to-date lab, radiology, and pharmacy support. Five family and general practitioners are on the active staff. Twenty-five specialists are on the consulting staff. Referral hospitals are located in Mountain Home, 24 miles away, and Harrison, 27 miles away. Yellville and Marion County, located in northcentral Arkansas, have a population of 1,200 and 11,000 respectively. The trade area is approximately 15,000. Yellville is located 135 miles from Little Rock and 95 miles from Springfield, Missouri.

For additional information, contact the Physician Placement Service, Arkansas Medical Society, Post Office Box 1208, Fort Smith, Arkansas 72902.

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P. O. Box 1208
Fort Smith, Arkansas 72902

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I give and bequeath to the Medical Education Foundation for Arkansas the sum of_____

dollars ($_____) to be used by the Board of Trustees of the Foundation for_____

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Signed _____

An Arkansas Experience with Percutaneous Transluminal Coronary Angioplasty

Paul J. Baxley, M.D., Bimlendra Sharma, M.D,. Joe K. Bissett, M.D., Gary Lane, M.D., Steve Hutchins, M.D., and Joseph A. Franciosa, M.D.*

ABSTRACT

Percutaneous transluminal coronary angioplasty (PTCA) is a promising new therapeutic modality for patients with coronary artery disease. At the University of Arkansas for Medical Sciences PTCA was performed in 72 selected patients with stable angina pectoris (n=35), unstable angina pectoris (n=25) or acute myocardial infarction (n=12) related to single or multiple, high grade coronary artery stenosis. Successful dilation was achieved in 70 to 89 stenoses attempted (79%). Early post-angioplasty assessment indicated relief of angina in all of these patients. Six of these patients required elective coronary artery bypass surgery after unsuccessful PTCA. There were no deaths, but 2 patients sustained acute transmural myocardial infarction. Our experience with PTCA confirms its safety and efficacy in relieving coronary stenosis in single as well as multivessel coronary artery disease presenting as stable or unstable angina pectoris or as acute myocardial infarction.

INTRODUCTION

The development of new therapeutic modalities is changing the practice of Cardiology. In the cardiac catherterization laboratory, there is a new interventional emphasis exemplified by percutaneous transluminal coronary angioplasty (PTCA). This non-surgical therapy has evolved rapidly from a technically feasible to a clinically desirable treatment modality. The atheromatous material causing vessel obstruction is compressed during PTCA which thereby relieves obstruction and increases blood flow through the vessel.[1] Since Gruentzig[2] treated his first patient in 1977, the application of this procedure was readily embraced by cardiologists. In recognition of the need to monitor this new technique, a PTCA registry was initiated by the National Heart, Lung and Blood Institute (NHLBI) in March 1979. At its inception the registry limited desirable candidates to those having normal left ventricular function, single vessel coronary artery disease and lesions that were high grade, concentric and non calcific. Because of the high success rate combined with a low incidence of complications of the procedure in these patients with single vessel disease, the registry was closed to single vessel disease and enrollment was limited to patients with multivessel disease in 1981. As of June 1984, over 3000 patients have been registered. The results indicate a 70% success rate with low morbidity. The major complications include death, myocardial infarction and emergency coronary artery bypass graft surgery.[3,4] Long-term follow-up of patients undergoing PTCA have shown this to be an efficacious modality in the treatment of angina.[5] About half of the patients undergoing PTCA are rendered asymptomatic without medications and a quarter of patients require repeat angioplasty or surgery.[5] Additional benefits of PTCA when contrasted to coronary artery bypass surgery are lower cost and shorter length of time for return to work.[7,8] The purpose of this article is to present our experience with PTCA, especially in patients with unstable angina pectoris or acute myocardial infarction.

METHODS

Patient Selection

As of December 1984, 92 patients were referred to the University of Arkansas for Medical Sciences and Little Rock Veterans Administration Medical Center for consideration for PTCA. After reviewing the coronary angiograms, 72 of the 92 patients were judged suitable for PTCA. The indications for PTCA in patients with stable angina were poor response to medical therapy and suitability for coronary artery bypass surgery. Unstable angina pectoris was defined as new onset or changing pattern of angina in the six weeks prior to PTCA. All patients with unstable had severe angina at rest which was either completely or partly refractory to medical therapy with nitrates, beta-blockers and calcium channel blockers. Patients with acute myocardial infarction had received intracoronary streptokinase and were left with severe residual coronary artery stenosis (70% or more of the infarct related vessel) had emer-

*From the Cardiovascular Division, Veterans Administration Medical Center and University of Arkansas for Medical Sciences, Little Rock, Arkansas.

Address for correspondence and reprints: Bimlendra Sharma, M.D., Associate Professor of Medicine and Director, Cardiac Catherization Laboratories, University of Arkansas for Medical Sciences, Slot 532, 4301 West Markham Street, Little Rock, Arkansas 72205, (Tel. 501-661-5880).

gency PTCA. The diagnosis of acute myocardial infarction was subsequently documented by serial electrocardiographic and creatine-kinase MB-isoenzyme (CK-MB) changes in all these patients.

Technique

Prior to PTCA conventional treatment with nitrates, calcium channel blockers and beta-blockers was continued. Arrangements were made for possible coronary artery bypass surgery with immediate availability of a full surgical team and operating room stand by before attempting PTCA in any patient. Immediately before performing the PTCA procedure sublingual nitroglycerin (0.8mg) was administered to all patients to counter the possible development of coronary arterial spasm. Our technique for PTCA is similar to that described by Gruentzig et al.[1] Briefly, in the cardiac catheterization laboratory, using Seldinger's technique, a guiding catheter is introduced through the right femoral artery and advanced to the coronary ostium. A double lumen 4F dilating catheter is advanced through the guide catheter to the stenotic area of the coronary artery. Continuous monitoring of catheter tip pressure and image intensification flouroscopy aid in correct positioning of the dilating catheter so that the balloon straddles the obstructive lesion. The balloon is then inflated for approximately 20 seconds to 4-10 atmospheres of pressure by means of a syringe connected to a pressure measuring device. Repeated inflations may be needed to produce satisfactory dilation. At the end of the procedure multiple projection coronary arteriography is performed. Figure 1 exemplifies a successful result.

During the initial 24 hours following PTCA patients are kept under observation in the coronary care unit where serial electrocardiograms and CK-MB determinations are made as clinically indicated. Anti-anginal medications are continued for the first 24 hours post-PTCA, and then gradually tapered off. Oral aspirin is continued for 6 months following PTCA. If PTCA is not suc-

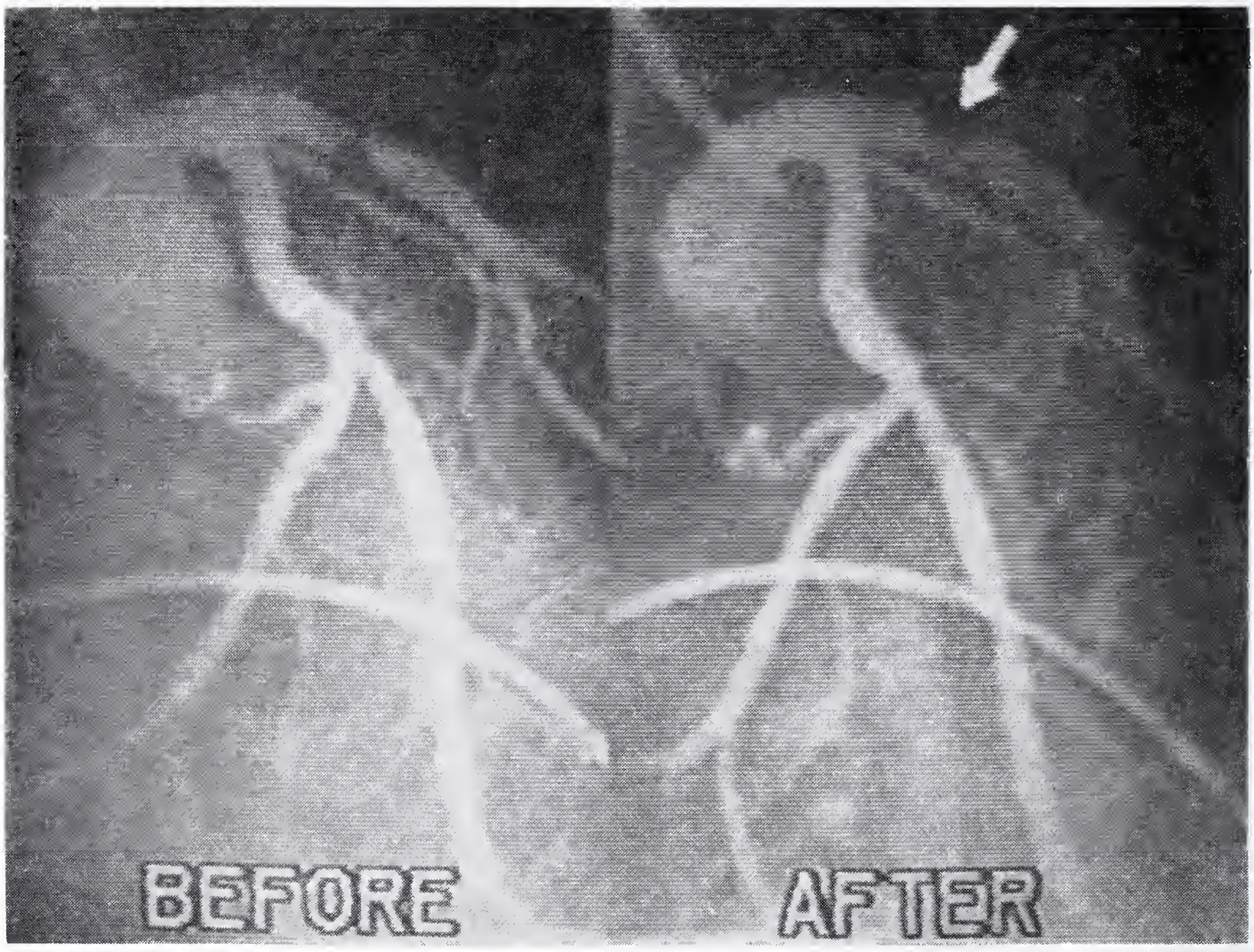


Figure 1.

Coronary angiogram before and after percutaneous transluminal coronary angioplasty of a high grade lesion of the proximal left anterior descending coronary artery. Note the reduction of stenosis indicated by the arrow.

cessful, patients are scheduled for coronary artery bypass graft surgery.

RESULTS

Characteristics of the patient population are summarized in Table 1. A total of 72 patients with coronary artery disease underwent PTCA. Whereas almost half of them had stable angina pectoris, 35% had unstable angina and 16% had acute myocardial infarction. The patients averaged 54 years (range 31-84 years) and the majority were men. Although single vessel coronary artery disease was most common, occurring in 63% of our patients, we did not exclude multivessel disease as 25% had double-vessel, and 12% had triple

Table 1. Patient Characteristics

	Stable Angina	Unstable Angina	Acute Myocardial Infarction	Total
Number of Patients	35	25	12	72
Age [yrs. (range)]	53(37-84)	55(31-82)	54(35-71)	54(31-84)
Sex [male/female]	30/5	18/7	9/3	57/15
Extent of Coronary Artery Disease				
Single-vessel	21	18	6	45 (63%)
Double-vessel	11	2	5	18 (25%)
Triple-vessel	3	5	1	9 (12%)

Table 2. Results of Percutaneous Transluminal Coronary Angioplasty

	Stable Angina	Unstable Angina	Acute Myocardial Infarction	Total
PTCA Vessel				
LAD	23	18	5	46 (62%)
RCA	6	2	6	14 (19%)
LCX	3	5	2	10 (14%)
Other*	4	0	0	4 (5%)
Lesion Site				
Proximal	32	25	8	65 (73%)
Middle	8	4	6	18 (20%)
Distal	3	3	0	6 (7%)
Number PTCA Attempted	43	32	14	89
Number PTCA Successful	33 (77%)	28 (88%)	9 (64%)	70 (79%)
Severity of Coronary Stenosis (%)				
Pre-PTCA	84± 9	85± 9	95± 3	89± 8
Post-PTCA	18±13	22±17	31±18	25±15
P	<0.001	<0.001	<0.001	<0.001

Abbreviations:
LAD = left anterior descending coronary artery
LCX = left circumflex coronary artery
PTCA = percutaneous transluminal coronary angioplasty
RCA = right coronary artery

* Other = left main coronary artery (n=2); spahenous vein graft (n=2)

vessel coronary artery disease. There were no significant differences in distribution of age, sex, or extent of coronary artery disease among our three groups of patients.

The results of PTCA are summarized in Table 2. We are reporting here only the results of a first PTCA. The left anterior descending coronary artery was the vessel most commonly subjected to PTCA, but the procedure was also performed in the right coronary artery or left circumflex coronary artery in a third of our patients. In addition, PTCA was also performed on 2 left main coronary artery lesions and in 2 saphenous vein grafts to the left anterior descending coronary artery. While the majority of lesions subjected to PTCA were located proximally, 7% were located in distal segments of the coronary artery. There were no significant differences among groups in the vessel or site of lesion location within the vessel subjected to PTCA.

We attempted PTCA in 89 lesions in 72 patients and 70 lesions (79%) were successfully dilated. This primary success rate was comparable in all 3 groups of patients. The severity of coronary stenosis averaged 89±8% in all patients before PTCA and was reduced to 25±15% after PTCA, $P<0.001$. The reduction in severity of stenosis was significant and similar in all groups.

Complications experienced by our patients are summarized in Table 3. Major complications included non-fatal acute myocardial infarction in 2 (3%) patients and the need for urgent coronary artery bypass graft surgery in 6 patients (8%) because of unsuccessful PTCA and persistent angina. No deaths occurred. Intimal tears were not further complicated and did not require treatment. Other complications were minor and responded well to appropriate treatment. The incidence of complications was significantly different in patients with unstable angina or acute myocardial infarction compared to those with stable angina.

DISCUSSION

Percutaneous transluminal coronary angioplasty is an effective modality in the treatment of coronary artery disease. Our overall primary success rate of 79% compares favorably with the national registry experience of a 63% primary success rate.[3,4] This result was obtained even considering the "learning curve" required for this procedure in our institution and our extending application of this technique to patients with multi-vessel coronary artery disease, unstable angina and acute myocardial infarction. In our experience the primary success rates with unstable angina (88%) and acute myocardial infarction (64%) were comparable to stable angina (77%). The application of PTCA to patients with unstable angina pectoris has been shown to be effective in relieving angina in single as well as in multi-vessel disease.[9,10] Improvement in exercise tolerance with reduction or discontinuation of medication is an immediate effect in the majority of these patients in our preliminary experience.[11]

Table 3. Complications of Percutaneous Transluminal Coronary Angioplasty

	Stable Angina	Unstable Angina	Acute Myocardial Infarction	Total
Chest Pain	2	2	0	4 (5%)
Coronary Artery Spasm	1	0	0	1 (1%)
Intimal Tear	2	2	1	5 (7%)
Acute Myocardial Infarction	1	1	0	2 (3%)
Emergency CABG	1	3	2	6 (8%)
Arrhythmia	0	1	1	2 (3%)
Death	0	0	0	0 (0%)

Abbreviation:
CABG = coronary artery bypass graft

Presently the long-term benefits of myocardial reperfusion with streptokinase are controversial, however, improvement in ventricular function and survival have been reported with streptokinase therapy during acute myocardial infarction.[12,13] Percutaneous transluminal coronary angioplasty for residual stenosis following reperfusion is effective in maintaining stable coronary reflow and could, therefore, decrease the number of recurrent ischemic events.[14]

In addition to proper selection of affected coronary vessels and lesion location, an important variable in determining the outcome of PTCA is the operator's experience. There is a "learning curve" in the performance of angioplasty that directly affects success. This curve is most obvious during the first 50 cases of an operator's experience.[15,16] During PTCA transient ballon occlusion of a coronary artery leads to transient interruption of myocardial blood flow. This may result in chest pain, ventricular arrhythmia and coronary spasm. These complications are usually treated successfuly with medical therapy during and immediately post-PTCA. Splitting of the intima or dissection of the diseased coronary artery area is frequent and perhaps even essential accompaniments of successful angioplasty. It is not surprising, therefore, that intimal irregularities, flaps and extrusion of contrast material into the vessel media are frequently seen. This splitting is usually not evident on follow-up angiograms and good forward flow is maintained. Intimal tearing occurred in 7% of our patients compared to the national registry incidence of 13%.[17] Other complications in our patients also compared favorably to the national registry experience. Acute myocardial infarction complicated PTCA in 3% of our patients versus 5% in the national registry, and 8% of our patients required emergency coronary artery bypass graft surgery compared to 7% in the national registry.[3]

Despite the high initial success rate, restenosis occurs in approximately 30% of patients during the first year after successful PTCA.[18] The restenosis of saphenous vein grafts after initial primary success is even higher.[19,20] Fortunately, repeat PTCA for restenosis is also highly successful and attended by a low complication rate.[18] When coronary artery bypass surgery failure rate and repeat PTCA angioplasty success rate are compared, PTCA is more cost effective.[21]

In conclusion, our experience and data from the national registry suggest that patients presenting with multi-vessel coronary artery disease can be suitable candidates for PTCA.[11,22] Furthermore, in multi-vessel coronary disease, PTCA of only one critical vessel can render patients asymptomatic.[10] Hence PTCA should be seriously considered in any patient who is recommended for coronary artery bypass graft surgery. In view of its high success rate, reasonable likelihood of reducing or eliminating symptoms and medications, and acceptably low complication rate, PTCA also merits consideration as an alternative to complex medical therapy for angina.

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The Impaired Physician

Mark Drogin, M.D.*

Physician impairment has been recognized as a significant problem in the past ten years. Programs have been developed to identify impaired physicians and bring them to treatment at an early stage of their illness. The author reviews etiology, types, and symptoms of impairment in physicians, and examines methodology of treatment. Prevention strategies at the medical school level are also discussed.

This is the tenth anniversary of the American Medical Association Council on Mental Health's first report on "The Sick Physician." In this paper, we will review the problem of physician impairment and examine the crucial role of psychiatrists in prevention and treatment programs.

Definition of the Problem

The American Medical Association defines the impaired physician as one who is unable to practice medicine with reasonable skill and safety because of physical or mental illness, including deterioration through the aging process or excessive use or abuse of drugs, including alcohol.[1] The resident physician section of the AMA divides impaired physicians into 3 groups: (1) the incompetent, (2) the unethical or malicious, and (3) the mentally disturbed physician. We will concentrate on the 3rd group in this discussion. Studies suggest that 10 percent of all physicians have been, are, or will become impaired. John Graham, a psychiatrist in New Mexico, believes that 6 percent of doctors are alcoholic, and 1 to 2 percent are abusing drugs.[2] Few statistics are available on physicians with psychiatric disorders but, in our country, doctors kill themselves at a rate equivalent to one medical school class per year.

Causes of Impairment

Evidence suggests that the development of physician impairment is multifactorial, some of these are intrinsic, others environmental. External stressors on the physician are related to society's image of the doctor as nurturing and protective, yet authoritarian, which is often reinforced by the physician's need for the patient to believe this. Cramond in Australia surveyed over 800 practicing physicians, and found their anxiety levels to be significantly higher than the general adult population. In his study, the reported sources of anxiety included: failure of treatment, diagnostic difficulties, impact of work on family life, death of children, obstetric difficulties, emergencies, looking after family and colleagues and night calls.[3] In addition, many young people choose medicine as a career with little knowledge of what is involved. Medical students too often make a choice of residency which they later regret, due to lack of knowledge of the specialty, its hours, and its associated demands on lifestyle. Finally, and most obviously, overwork and fatigue are both stressors and symptoms of stress, some physicians work hypomanically or obsessively to ward off internal or external stresses, from insidious problems they are unable to face. The first two months of internship is the most stressful period of a physician's career, especially because of role strain. A mismatch exists between the new resident's sense of identity and the tasks he must perform and other professionals perception of him. Finally, caring for chronically ill, elderly and senile patients is especially stressful for the practicing physician; all three of these groups are steadily increasing in the general population.

Studies suggest that certain personality traits of the physician actually predispose him to impairment.

Vaillant studied 47 physicians over 30 years of adult life. He found that doctors with the least supportive childhoods were more likely as adults to have (a) made 10 or more visits to a psychiatrist, (b) abused drugs, and (c) have an unhappy marriage, than those with a more nurturing childhood. In addition, he found that physicians who chose to assume direct care of patients, (internists, family physicians, obstetricians, pediatricians, and psychiatrists), have a higher incidence of these three negative features than physicians in administration, surgery, or research, or a control population of non-physicians. From this, Vaillant inferred that primary care physicians may select these areas of medicine because of unfulfilled dependency needs, in order to give others the care they never received in their own childhoods.[4] Vaillant also found that physicians use 4 coping strategies or defense mechanisms more than other people do. These are: (a) *altruism,* doing unto others as you'd want others to do unto you. In

*Assistant Professor of Emergency Medicine, Psychiatry Resident, Member, Impaired Physician Committee—University of Arkansas for Medical Sciences, Department of Psychiatry and Behavioral Sciences, 4301 West Markham, Little Rock, Arkansas 72205.

moderation, this benefits the patient, but altruism becomes maladaptive if the doctor doesn't receive adequate rewards for his good deeds; (b) *reaction formation,* which can be particularly destructive in the area of dependency needs; (c) *passive-aggressive behavior,* in which physicians frequently turn the other cheek, and are not allowed to express anger to a patient. They have no healthy outlet for the anger, which may be displaced and expressed to the physician's spouse. (d) *dissociation*, or neurotic denial, which Vaillant illustrates with the example that a marathon runner will rest when fatigued, while a fatigued physician may take sedatives or amphetamines to rid himself of the symptoms, without acknowledging the illness.

Someone once defined an executive as "one who has lost control of his time," and, by this definition, physicians qualify as executives. Their time is controlled by others, and they hold multiple occupational posts. This can lead to treadmill living, eliminating unscheduled time, especially quiet hours for creative efforts, time for dealing with personal crises, and time for socializing.

Substance Abuse

Substance abuse is a significant problem for health professionals. Vaillant found that feelings of dependency, pessimism, passivity, self-doubt, as well as hypochondriacal traits, all characteristic of the "pre-addictive personality" were more common in physicians than in a control population.[4] These traits, easy access to drugs, and stress, are the 3 ingredients leading to drug dependency in doctors.

John Henry Pfifferling, Director of The Center for the Well-Being of Health Professionals in North Carolina, found that most physician addicts were in 4 specialty areas: anesthesiology, general and family practice, emergency medicine and psychiatry.[5]

Johnson and Connelly at the Menninger Clinic reported a series of addicted physicians in 1981, of which more than half were in primary care specialties, which corrobrates Vaillant's suggestions about unmet dependency needs. In the Menninger series of 50 doctors, 12 patients combined drugs with alcohol, while 15 patients abused drugs alone.[6]

The most commonly abused class of drugs were narcotic analgesics. This was in close agreement with a study at Wisconsin in 1982.[7] The most frequently used drug was meperidine *(Demerol)* followed by pentazocine *(Talwin).* In older studies, dihydromorphone *(Dilaudid)* was frequently abused by doctors, but it has declined in abuse in recent years. Sedatives were also abused, particularly benzodiazepines but also barbiturates.

Addicted physicians generally first encountered drugs as a form of treatment, rather than in a social context. The initial prescription may have been self-written, or it may have come from a colleague, as treatment for pain, agitation, insomnia, or fatigue. The drug enabled the doctor to temporarily cope with a personal or family problem, or to continue with a heavy work schedule.[8]

The 1981 Menninger study found that the earlier an addiction problem developed in a doctor's career, it was more likely to be associated with serious psychopathology. In their study, 50 percent of patients under 40 years of age showed borderline personality organization, compared to only 12.5 percent in the over 40 age group.[6] This may reflect the group of middle-aged and older physicians who become addicted in reaction to midlife crises of various kinds.

Green and the Virginia State Medical Board discovered several factors which were common precipitants of addiction in those physicians with a pre-addictive personality. The most frequent precipitant was chronic illness with physical pain. The second most common precipitant was the tragic event, usually the death of a family member. The third most common factor was addiction of the doctor's wife. Often, the physician was the provider of his wife's narcotics.[9]

Additional factors cited are: easy availability of drugs, and the misconception that, because physicians are more knowledgeable about drug actions, they are less likely than the average person to become addicted.

The addicted physician differs from the street addict in several ways: the former uses pure medications, he rarely overdoses, he has a more difficult and more prolonged detoxification period, but he has a better prognosis for cure compared to the street addict.[9]

Here's a typical example: Dr. J. B. during his student years suffered a severe and painful injury. He became addicted to meperidine and had trouble withdrawing. Four years later, while in a rural family practice, he noted that whenever he was tired or under stress, he would develop pain in the old injury site. He started using meperidine

again, became addicted, and had a second difficult withdrawal. After this, he was induced to go into a more limited-type practice after further specialty training. He did well, and kept drug-free until he suffered a myocardial infarction at age 45, and became fearful in the hospital of becoming addicted to the morphine they were giving him for the chest pain. After his recovery, he returned to practice, and was able to learn to decrease his responses to patient's unreasonable demands.

Alcohol Abuse

Ethanol *is* a drug, and current estimates are that between 10,000 and 25,000 physicians are impaired because of alcohol abuse. Mortality from liver cirrhosis among doctors is 3 times that of the general population.[10]

Alcoholic physicians generally show comparable academic ability in medical school, although signs of alcoholism appeared for the first time during medical school in some of these doctors. Alcoholic physicians present later in life and less often spontaneously than non-physician alcoholics; they often first come to the public attention with driving while intoxicated or public drunkenness charges.[11]

Often, colleagues will ignore the symptoms of alcoholism in a physician, or give them a more acceptable label, like gastritis or depression. When we do care for an alcoholic physician, it is often complicated by the pervasive view in the medical community of alcoholism as a bad habit requiring punishment. The overall prognosis for recovery is good for this group of patients, and is similar to that of the narcotic addicted patients.

A tragic example is that of Doctor H., a very sensitive, guilt ridden man. Early in training, he treated his periods of overwork with the disinhibitory effects of alcohol, creating a habit of episodic drunken binges and lost weekends. He went into a rural practice, but he continued binge drinking. He was often unavailable for several days at a time, followed by round-the-clock patient care to assuage his guilt. He later added tranquilizers and sedatives to his list of abused substances. Despite offers of help from his friends, wife, and children, he died in his office of an overdose.

Symptoms of Physician Impairment

G. Douglas Talbott[12] has listed 6 areas of sequential impaired performance and behavior in the sick doctor. First, community involvement suffers. The physician eliminates contact with his friends and peers, and shows embarrassing behaviors like DWI arrests, and public drunkenness. The community gradually loses respect and confidence in the doctor. Second, his family life worsens, with withdrawal from his family, fights, and children with emotional and legal problems. Third, the doctor switches jobs numerous times, attempting a "geographic cure." Often he gives inappropriate references, or accepts jobs not commensurate with his training. He may also have unexplained intervals between jobs. Fourth, the physician's physical status deteriorates, with an unkempt appearance, numerous physical complaints and multiple self-prescriptions. Fifth, his office conduct suffers. Symptoms include: arriving late and becoming angry or hostile to patients, often with the office nurse covering for him. The "locked door syndrome" is described by Talbott, with the doctor locking himself in the office bathroom to ingest or inject drugs. The last place for the impairment to be evident is in the hospital. He may make midnight rounds, give inappropriate orders, or have slurred speech when called by the ER personnel at night.

Other Psychiatric Problems

Of psychiatric disorders other than drug and alcohol abuse which lead to physician impairment, the most frequent are: depression, and sometimes suicide; marital problems; difficulties related to compulsive personality traits and or obsessive compulsive neurosis; and chronic organic brain syndrome in the aging doctor.[13]

The incidence of unipolar and bipolar affective disorders in male physicians is about the same as in the general population. Often this is an accompaniment to drug dependence, and this type of depression responds to the treatment of the drug problem. The "success-type" depression occurs in the 40's and 50's, with the feelings of emptiness that follow the attainment of one's professional goals. The fatigue of a demanding schedule can worsen a depression in the doctor.

Obligatory achievement is one sign of the obsessive character, especially prevalent in the child raised by autocratic and restrictive parents. The physician with this problem can only maintain his self-esteem through compulsive self-denial, and feels guilty when he receives help from others. Thus, the doctor can fill his life with professional obligations, leaving little time for relationships with family and friends. This sets the stage for depression, often precipitated by the loss of a loved one, physical illness, or some other stressor.

At this point, the physician tries to fortify his self-esteem with personal excess or some sort, including drugs or alcohol. The depressed physician becomes overwhelmed by despair, fear, and uncertainty, and his early treatment is impeded by the guilt and shame associated with receiving nurturance from others and feelings of being weak. Seventy-five percent of doctors who commit suicide had a pre-existing depression.

Marital problems among physicians appear in predictable patterns. Many physicians marry during their training years to women who provide them with financial and emotional support during this period. When the doctor develops a busy practice, there is a role shift, with his wife feeling displaced and unimportant. Physicians' wives often react to this with depression, substance abuse, and/or somatization. His wife may feel that she can only attract her busy husband's attention if she has a genuine medical complaint. Another problem of the medical marriage relates to the physician carrying his authoritarianism home with him, making decisions for his wife and children. Finally, doctors who learn professionally to "turn the other cheek" can carry this defense home with them, leading to difficulty in communication of feelings with his wife.

Compulsive personality traits are good to a certain extent in the physician, but can contribute to overwork and fatigue. These physicians tend to become emotionally exhausted in trying to meet the unreasonable demands of dependent patients; they may have fostered the dependency to satisfy their need to feel omnipotent. Long hours and a fixed practice pattern are characteristic. Often the physician suffers from headaches, with self-medication leading to narcotic analgesic dependence. These physicians are also virtually phobic about asking for help for themselves.

Finally, chronic organic brain syndrome is another problem in the aging physician, and often the doctor is unaware of his cognitive impairment. These physicians are often sheltered by their spouses and office staff. In an attempt to augment a dwindling practice, the physician may unconsciously increase his prescribing of controlled substances.

Physician Suicide

Male physicians in this country suicide at a rate about twice as high as the general male population. There is some controversy about the actual figures on suicide in physicians, due to methodological problems with the studies.[14] Physicians, overachievers that they are, tend to have more successfully completed suicides than the general population, drugs, obviously, are the most common method. Divorce and old age are significant risk factors.

Women physicians suicide at a rate three to four times that of their non-physician sisters, but probably no more than the male physician population. Women doctors who suicide generally do so at a younger age than male physicians. Psychiatry and anesthesiology are high risk specialties for suicide, and women psychiatrists have a particularly high incidence of suicide.[15]

Owing to the fact that physicians tend to regard personal illness as a weakness, a narcissistic injury which leads to psychic regression will allow the doctor to deny a suicidal danger in himself that would be quickly detected in any other patient. Among medical students, suicide is the number 2 cause of death. One study of 1,200 medical students subjected to personality testing and psychiatric interviews suggested that one could predict which medical students would later commit suicide.[16]

Medical Students and Residents

Medical students and residents are at the most stressful point of their careers. One author described a "house officer stress syndrome," with episodic cognitive impairment, chronic anger, pervasive cynicism, and family discord, which can progress to major depression, substance abuse, and suicidal ideation. These factors predispose to the syndrome: a work week of more than 100 hours, rounds seven days a week, and more than eleven hours of work per day when not on call.[17] Another study[18] surveyed 54 residents who had just completed internships at Barnes Hospital and Children's Hospital in St. Louis in 1972, found that 30 percent of them had a depression during the internship year.

Treatment of Impaired Physicians

There is a consensus that physicians make poor patients.[19] Hospitalization can be a severe narcissistic trauma, involving a role reversal from caretaker to patient. Noncompliance is high, with discharge from the hospital against medical advice in 12.5 percent of doctor-patients, compared with 1.3 percent for general psychiatric patients. Many hospitalized doctors are manipulative, aloof, and overtly hostile. They use much denial, and tend to externalize conflicts about identity issues in

the hospital setting, leading to conflicts between patient and therapist, patient and ward staff, and between treating doctor and ward staff.

Until about 1970, the physician's problems were largely ignored by his peers until finally, when action was taken, it involved revoking his license in a punitive fashion. It required the proof of fault, often with a long legal battle, while the doctor continued his practice.

In 1969, Florida enacted the first 'sick doctor' statute, which became a model for later legislation. The goal of the law was to get the sick doctor out of practice and into treatment rapidly. The AMA Department of Mental Health has led the way in developing model impaired physician laws to be enacted on a state-by-state basis, and holds biennial conferences on the impaired physician.

The most widely respected and oft imitated program for the impaired physician is in Georgia, run by Dr. G. Douglas Talbott, under the aegis of the Georgia State Medical Society.[20]

The first step involves identification of the ill physician, quite difficult due to the conspiracy of silence of his family, peers, employees, and even his patients. It is accomplished mostly by peer contact and public relations maneuvers like a 24-hour hotline for impaired physicians or their families, and intensive public education through the medical society.

The next phase is motivation, and comprises intervention and confrontation. Talbott sends two physicians who are unknown to the sick doctor to visit the physician in his office and confront him with documentation of his impairment. They stress the advocacy nature of the program and the disease concept of substance abuse. If they are requested to leave, they make a second visit the next day. If they are again asked to leave, a second, and even a third team will visit the physician at least twice, in a system called "platooning" which Talbott considers very effective.

The actual treatment program takes the physician out of his practice for a four-month period in a private psychiatric hospital. The first 96 hours are a detoxification period on a medical unit for the substance abusing doctor.

The next phase of treatment is in a residential halfway house facility for professionals, which includes attending an addiction clinic tailored for the physician.

In the third phase, Talbott initiates "mirror-image therapy," with the recovering patient acting as treating physician to other drug-dependent doctors, allowing the disabled doctor to treat his own illness in his peers. This approach reinforces the uniqueness of the physician's denial pattern.

The medical students are involved in Talbott's program in two ways: first, they visit the unit on clerkship rotation, which helps restore the recovering doctor's self-esteem. Also, the disabled doctors appear in groups before the junior medical students at Emory Medical School, and conduct a two hour seminar called "it couldn't happen to me." Also, groups of 10 to 15 medical students, their spouses, graduate physicians and impaired physicians in treatment meet at the program director's home one evening for a four to five hour discussion.[21]

Talbott has also developed the Caducedus Club, an Alcoholics Anonymous-type group which meets weekly for educational or supportive sessions for recovering impaired physicians. The family of the sick doctor becomes involved in couples therapy workshops, family therapy, and Al-anon and Ala-teen groups.

The final phase of Talbott's program is re-entry and after-care, a twenty-month outpatient period which includes a contract with the doctor for weekly Caduceus Club attendance, three to four times per week attendance at Alcoholics Anonymous or Narcotics Anonymous, and/or contact with physician sponsors scattered across the state.

The disabled physician who denies his illness and refuses a course of treatment is referred by the advocacy group to the Committee on Professional Conduct and Medical Ethics of the State Medical Society, which then makes recommendations with some rapidity to the state licensing board.

Talbott has had good results. In the first five years of his program, 269 of the 366 physicians he contacted entered the program. Of these 269, 168 were returned to full practice. Many other states have developed programs similar to Georgia's. In California, a physician treatment program allowed 109 of 117 physicians participating to continue their practices while under treatment.[22]

Across the nation, there exists a great need for improved psychiatric care for medical students and residents, and increasing awareness of their unique problems. UCLA Medical School has established a mental health program for physicians-in-training, which includes free psychiatric evalu-

ation and short-term psychotherapy for UCLA medical students and house officers, utilizing physician volunteers from the faculty. The program also conducts research on stress in medical education. For medical schools initiating mental health programs for students and residents, the psychiatry department could provide treatment for physicians and physicians-in-training, as well as teaching young physicians effective coping behaviors. Increased use of peer support groups during training would pay dividends in earlier intervention and self-referral when colleagues become impaired. Workshops on coping with the stressors of medical training and practice, such as loneliness and isolation, examination anxiety, dependency feelings, fear of incompetence, and others, can be developed here for medical students and residents. Additional training in conflict management, including confrontation techniques and negotiation strategies and peer counseling, would be helpful. There should also be exposure of students to recovery models, such as successfully recovered alcoholic or drug-dependent physicians, to offset the non-cure mind-set prevalent in thinking of these problems in a university medical center setting. Finally, while disabled physicians cannot reach out for help, they can show a high rate of recovery once in treatment. Our goal should be to identify the faltering physician before his professional and personal life hit bottom, and start rehabilitation at once.

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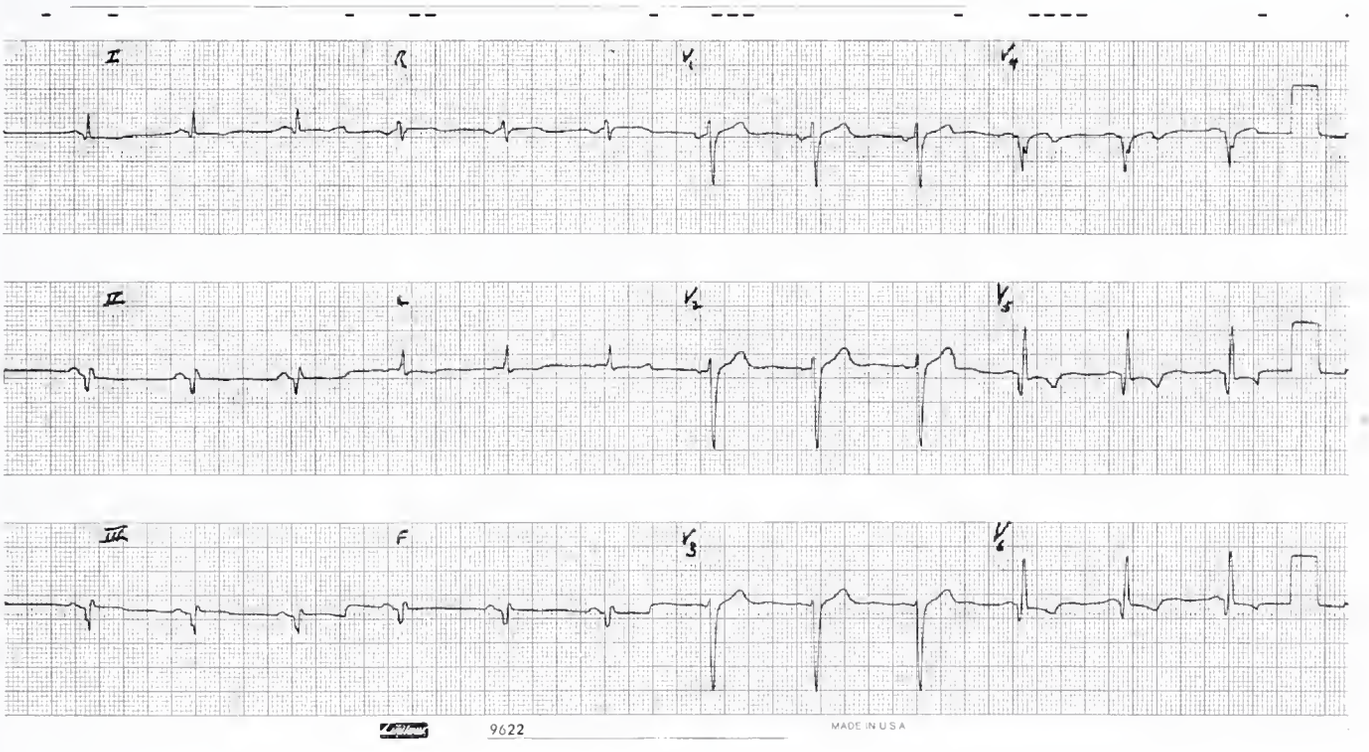
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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 90)

HISTORY: J. C. W. is a 47-year-old smoker who has presented to the hospital because of chest pain. The patient has had a choking sensation in his chest related to exertion during the past six months. On physical examination, he has hypotension, jugular vein distension, crackles in his lung bases, a holosystolic murmur, and an S_3 gallop. What do you think of his electrocardiogram as related to his clinical status?



Donald Max Raney, M.D., and John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

Seat Belt Usage — Preventive Orthopedics

R. Barry Sorrells, M.D.*

The state of Arkansas had an opportunity to pass a mandatory seat belt use law during the 1985 Legislative Session. Unfortunately the law was not passed and as a result up to 200 Arkansans' lives will be lost annually and 4,000 serious injuries will be sustained that could have been prevented. Passage of this law could have resulted in a substantial reduction in the 87 million dollar cost per year in Arkansas for private and public expenses resulting from highway accidents. Seat belts save lives and prevent injuries! Their efficacy has been established in well controlled scientific studies in this country and in other countries where their usage is legally required. There is no good argument against the routine use of seat belts.

Most people realize that seat belts do save lives and help prevent injuries. Unfortunately, most also consider themselves invulnerable or simply do not bother to spend the five seconds to buckle-up. Only about 10% of the people use the safety device that is installed in almost 100% of the vehicles.

If legislation cannot be enacted and if laws governing seat belt use cannot be passed at this time then further attempts at public education seem to be our only hope. Preventive medicine relies on explaining facts to patients. Educating patients in the use of seat belts is a part of preventive office orthopedics.

Why Seat Belts Should Be Used

In 1983, 555 deaths and more than 11,000 serious injuries were caused by motor vehicle accidents in Arkansas. Road trauma is the fifth leading cause of death in our country and the leading cause of fatalities for Americans between the age of one and twenty-four. Motor vehicle accidents are the leading cause of work related deaths. Countries with mandatory use of seat belts have reduced vehicle accident fatalities and serious injuries by as much as 45%.

Facts

Every year, approximately 22,000 front seat passengers are killed in cars equipped with safety belts. About half of these people could be saved by using those seat belts.

Vehicle accidents result in 13,000 injuries each day in the U. S., 45 million in the last decade.

Road trauma produces more new paraplegics and quadriplegics each year than all other causes combined.

A person is about 25 times more likely to be killed if ejected from a vehicle than if he or she remains inside and buckled up.

Less than one half of one percent of all injury producing collisions involve fire or submersion. Even then, it is better to be buckled-up and conscious to escape.

Americans have paid more than fourteen billion dollars for seat belts in vehicles on the road today. Using them costs nothing more.

Road trauma cost the nation $57 billion in 1980.

More than thirty countries worldwide and most provinces of Canada require seat belt use. Belt use in Ontario is estimated at 60 to 80%. Since Ontario passed seat belt use legislation in 1976, the number of hospitalized accident victims has dropped 30%.

A study of 28,000 accidents in Sweden revealed not one belted person killed in collisions of under sixty miles per hour, but several un-

*Little Rock Orthopedic Clinic, P.A., 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

belted persons were killed in collisions of under twenty miles per hour.

The force of striking a vehicle interior with the head in a ten mile per hour collision is equivalent to the force of catching a 200 pound bag of cement from a first story window.

Thirty-eight percent of fatalities are caused by striking the steering wheel or windshield with the head.

Belted drivers have more control over their cars in an emergency situation and are more likely to avoid an accident.

One out of four serious injuries to passengers is caused by occupants being thrown into each other.

Appropriately restrained children, now required in more than one-third of the states (Arkansas included), are at risk if struck by an unrestrained adult occupant.

Three out of four crashes happen within 25 miles of home.

The possibility of being in a serious accident in one's lifetime is 50%.

The previous statements are facts! If we can make our patients aware of these facts, and consequently wear their seat belts, we can reduce up to 50% of the deaths and serious accidents resulting from motor vehicle accidents. This is preventive medicine in its finest form.





EDITORIAL

Guanine Nucleotide — An Intracellular Traffic Cop

Alfred Kahn, Jr., M.D.

One fascinating area of the medical literature is that pertaining to intracellular metabolism. This was terra incognita until recent years. Medical students were aware that food stuffs, hormones and other chemical substances were presented to cells, but there the information stopped. How the substances penetrated the cell and how they reacted inside the cells were not known, except in a very general sort of way. The first intracellular messenger which appeared in the medical literature was Cyclic AMP. More recently, other intracellular substances which act as messengers and chemical modifying agents have been discovered. There is an excellent article in the New England Journal of Medicine under the heading of Seminars in Medicine entitled "Clinical Implications of Guanine Nucleotide – Binding Proteins as Receptor-Effector Couplers," by Spiegel, Gierschik, Levine and Downs (Volume 312, Page 26, January 3, 1985). Although the title is frightening, the thrust of the article is not difficult to understand.

The authors describe G proteins as those cellular proteins which bind guanine nucleotides with high affinity. They go on to relate that three such G proteins have been discovered in recent years, and they assist in conveying chemical information from the extracellular environment to the intracellular environment. They state that two of the G proteins are found in almost every cell but one of them is found principally in one of the cells of the retina. The authors describe Cyclic AMP as being the king-pin in the transmission of messages through the cell wall, and they state that some neuro-transmitters and chemical substances affect Cyclic AMP to extend or reduce its area and intensity of activity. Cyclic AMP activity can be stimulated by many substances, and the determining factor is not the Cyclic AMP but certain receptors on the cell's surface plus certain chemicals which modulate Cyclic AMP's activity inside the cell.

Spiegel, et al., state that it's the tissue distribution and ligand specificity which are the decision-making factors in the production of Cyclic AMP when exposed to a given agent. It is apparent from their review that receptors for a given agent may be uniformly distributed, but in some instances, a specific receptor is localized to a very limited number of tissues. It is of further interest that Cyclic AMP released in the environment of one cell may produce one physiologic response such as the release of a hormone, whereas in another cell type, it may result in some biochemical process unrelated to the endocrine system as such. It is said that the clinical implication of Cyclic AMP is that if the general components of the Cyclic AMP system are disturbed, the result would be widespread in a number of tissues; on the other hand, if there is an alteration in the receptor on the surface of the cell or inside the cell, the effects in the Cyclic AMP system would be much more limited.

The guanine nucleotides are described by the authors as being "key modulators of cyclase activity"; they are two membrane proteins which are said to bind guanine nucleotides and, as such, they interact in the adenylate cyclase system. Spiegel, et al., state that they are, so-to-speak, oriented toward the cell interior. One of the guanine nucleotide binding proteins which is called Gs, is described as being a substance which reacts with "cell surface receptors for stimulatory ligands (Rs)." The combination of Rs and the cell surface receptor create a situation in which there is a strong attraction or affinity for the extracellular chemical substances. Activated Gs, in turn, stimulates the so-called catalytic unit to form Cyclic AMP. It is amazing that research

biochemists have been able to study Gs, but they have, and it appears that it is made up of three subunits which are capable of dissociating. Guanosine triphosphate (GTP) is said to bind to the alpha subunit; it can be spread from this by an enzyme; when GTP unites with the alpha subunit, it activates the catalytic unit. When the activated unit is acted on by certain enzymes, it becomes de-activated and the subunits of Gs reform into an entity.

Of current interest is the fact that in addition to the stimulating type of G proteins, according to the authors, there is also an inhibitory G protein which is known as Gi. Thus, both stimulatory and inhibitory activity can be promoted by the cell surface chemicals. It is said in this article, that Gi reactions are entirely similar in their inhibitory activity as Gs is in its stimulatory activity with regard to the intracellular "hormone" system.

There is a special G protein which is present in the rods of the retina. It is similar to Gs and Gi in many ways. It is abundant in eye tissue and has served as a source of study for the biochemistry of these compounds.

Spiegel, et al., relate that ultimately what happens to the stimulation or inhibition of a cell can be influenced at various levels; and can be varying concentrations of hormones on the outside of the cell; there can be changes in the receptor of the cell; there can be changes in the G proteins which can lead to an enhanced or a reduced production of Cyclic AMP. Obviously, the G proteins could be altered either qualitatively or quantitatively and effect Cyclic AMP. One of the disorders which has been studied in relationship to the substances discussed above is Cholera, which produces severe diarrhea. Cholera exotoxin is described as increasing the activity of Cyclic AMP, leading to the well-known diarrheal effect. The reason Cholera exotoxin can produce diarrhea is that guanosine triphosphatase is diminished and this, in turn, leads to prolonged activation of the Cyclic AMP stimulus. It is said that E. coli strains, which produce diarrhea, have a similar reaction to Cholera exotoxin. The biochemistry of the reaction between the various components that react to cause Cholera is somewhat complicated in that there are other factors necessary such as nicotinimide; this is both good and bad—in that nicotinimide is a means whereby reaction might be studied, and furthermore, increasing the dose of nicotinimide in vitro and in theory, increasing the amount of nicotinimide available might alleviate the symptoms of Cholera if it were possible to obtain this situation in the bowel.

Pertussis toxin has been studied from a point of view of the G proteins. It has been found that pertussis toxin inactivates Gi. As a consequence of the action of pertussis toxin, Gi is separated from the inhibitory receptor. Spiegel, et al., postulate that some of the chemical effects of pertussis have the effect of pertussis toxin on Gi. It is cited that animals treated with pertussis vaccine and histamine do not have appropriate alpha adrenergic effects and many die from vasodilitation. It is also said that pertussis toxin causes a hypoglycemia which is also the result of the effect on Gi.

Spiegel and his co-authors state that hormones do not always seem to cause as quantitatively strong an effect as would be anticipated. This may be due to a deficiency of the hormone, but it also may be due to resistance on the part of the so-called target cell; they cite the fact that in pseudohypoparathyrodism there is adequate circulating parathyroid hormone, but the target cells in the tissue do not respond normally to the usual amount of parathyroid hormone; it was thought by some that when this set of circumstances obtain, that the receptors on the target cell were, in some way, reduced in number or were qualitatively abnormal. In the more recent past, it has been shown by scientists working in this field that the defect is not in the adenylate cyclase complex, but is said to be a deficiency in Gs; the amount of Gs and the amount of Gi can be found by measuring so-called NAP (nicotinamide adenine dinucleotide). Using this technique, the authors report that Gs in pseudohypoparathyroidism may be diminished 50 percent; the deficiency of Gs is hereditary in patients with pseudohypoparathyroidism. It is important to point out that Spiegel, et al. have found other types of pseudohypoparathyroidism in which there is an adequate amount of Gs but some other factor is abnormal in the adenylate cyclase setup. One very interesting point the authors brought out concerning the altered responsiveness to hormones is that as one gets older, there is a decrease in responsiveness to hormones; however, the authors state that Gs is equally active in cells from older people and younger people, thus the loss of responsiveness in aging is not Gs.

Spiegel, et al., reviewed the possible role of retinal G proteins in inherited retinal degeneration. They suspect that GMP is, in some way, abnormal in retinal disease.

The G proteins are suspected of playing a role in desensitization. It is said that target cells respond less actively to a given amount of stimulus if the stimulus is applied over a long period of time. The authors interpret desensitization to mean decreased response to an agonist; the opposite is called supersensitivity. It is obvious that desensitization can be of two types: one for a specific substance and the other to multiple substances which bind to adenylate cyclase. In the former, Cyclic AMP is decreased to just one agonist. In the latter, there may be a decrease in sensitivity to Gs.

Thyroid and steroid hormones are said to not directly alter Cyclic AMP levels. Apparently, they may also alter the level of Cyclic AMP by indirect means. This implies that some chemical substances involving the G proteins function as permissive agents to facilitate or decrease the reaction in the target cells.

The field of intracellular responsiveness is extremely interesting and all readers would do well to study the Spiegel, Gierschik, Levine and Downs interesting review on the chemical implications of guanine nucleotide binding proteins.



ANSWER—Electrocardiogram of the Month

DISCUSSION: The trace shows sinus rhythm without heart block. There are Q waves in the inferior and lateral chest leads but significant ST segment elevation is absent. The T waves are diffusely abnormal. These changes are compatible with inferior and lateral infarction of unknown age, probably remote. His clinical picture is that of congestive heart failure, mast prabably related ta coronary disease. The absence of acute changes on the trace does not exclude recent infarction. Mitral regurgitation or ventricular septal defect related ta infarctian should be considered and excluded as elements contributing to heart failure. Noncardiac factors such as infection, anemia, etc. which could precipitate failure should also be excluded. The editor wishes to thank Dr. Don Raney of Sparkman, Arkansas, far his contributian to this month's feature.



"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Kingsley White Cosgrove, Sr., M.D. — Eye Specialist

Calvin Hanna, Ph.D.*



Today we see the pitiful picture of advanced trachoma with extensive pannus, marked lid deformities and blindness that is now endemic in the desert regions of the world. Just forty years ago the endemic area was larger. It extended across the United States in the mountain regions from Virginia to Oklahoma, and in all Indian reservations. In 1938 it was found that acute trachoma could be treated using sulfanilamide. A leading ophthlamologist in each of the endemic states was called and they decided to eliminate trachoma through education, surgery and drug treatment.

Doctor Kingsley W. Cosgrove, Sr. in 1939 began a campaign to eliminate this blinding condition in the northern part of Arkansas. Newspaper articles soon appeared announcing "Eye Clinics to be Held by Dr. Cosgrove." State funds were so short that the State Welfare Department could not afford the cost of the sulfanilamide nor could the patients. The endemic area in Arkansas covered several hundred thousand residents living in areas without roads, electric lights or running water. Yet trachoma was eradicated in a span of ten years. Dr. Cosgrove continued a statewide educational program for the training and rehabilitation of the sightless. In addition, he was the driving force for setting up state supported eye care for the indigent that was second to none in this great country.

Kingsley W. Cosgrove, Sr. was born in St. Mary, Ontario, in 1899. As a young man, he fought in World War I and then continued his education, receiving a Doctor of Medicine from the University of Toronto Faculty of Medicine in 1922. After an internship and a residency in Eye, Ear, Nose and Throat at the Henry Ford Hospital in Detroit, he joined Dr. Vinsonhaler in Little Rock in 1927. Dr. Cosgrove taught at the Medical School and was a Clinical Professor of Ophthalmology at the time of his death on December 12, 1964. He published a series of research articles in national journals on trachoma and was considered to be the outstanding authority in this field.

*Department of Pharmacology and Ophthalmology, University of Arkansas for Medical Sciences.

MEDICINE IN THE NEWS



THE MONTH IN WASHINGTON

Propac Recommendations

Medicare rates in fiscal 1986 would rise by an estimated 1% to 3% under a formula recommended by a panel Congress set up to advise Medicare officials on future rates and changes in Medicare's prospective pricing system.

The recommendation by the Prospective Payment Assessment Commission (PROPAC) contracts with a Reagan Administration budget proposal to freeze the 1986 rates for each of the program's 468 diagnosis related groups. Payments to hospitals in fiscal 1986 would be from $320 to $960 million greater under the PROPAC proposal than the Administration plan.

When Congress created PROPAC in the same law that set up the DRG payments, it said that after 1986, the Secretary of Health and Human Services should consult with PROPAC in the development of new rates. HHS is not required to accept PROPAC's advice, however, and the reaction of Congress and the Reagan Administration to the commission's recommendations suggested 1986 rate increases could serve as a key test of PROPAC's influence and future.

Adopted unanimously by the 15 PROPAC members, the rate update is one of 21 recommendations included in a report that PROPAC presented to Congress April 1. Other recommendations call for improving a wage index that many believe is unfair to rural hospitals; development of special rates for hospitals that treat an especially large percentage of indigent patients; and "recalibration" or revision of the relative weights of the DRGs in 1986.

The commissioners also studied several procedures where the current DRG assignments and weights have been questioned. They concluded that cases in which percutaneous transluminal coronary angiplasty (PTCA) is the principal procedure should be temporarily reassigned from DRG 108 to DRG 112. Study on this issue will continue, however, and the procedure may be reassigned to DRG 125 at some later date.

On the other hand, the PROPAC members recommended, the DRGs involving cardiac pacemaker implants, bone marrow transplantation, and cataract extractions and intraocular lens implants should not be altered until the DRS weights are recalibrated. PROPAC has submitted an additional report on its pacemaker recommendations to Congress and will continue to study all of the above procedures.

* * * *

Propac Pacemaker Report

Despite indications that flawed data may have been used to construct Medicare diagnosis related groups (DRGs) affecting cardiac pacemaker implantations, no adjustments in the pacemaker DRGs should be made at the present time, the Prospective Payment Assessment Commission (PROPAC) has told Congress.

In a report released earlier this month, the commission pledged continued watchfulness for possible quality deterioration in pacemaker services in the future. The advisory group also will do further studies to try to determine whether DRG adjustments for wages, location and other factors may lead to unjustified pacemaker payment variations that discriminate against certain types of hospitals.

The report recommended nonetheless that any adjustments in the four pacemaker DRGs (115, 116, 117 and 118) be made only as part of the overall recalibration of the weights used as a measure of the relative resource use of each of the 468 DRGs. Congress has directed that the weights be recalibrated for fiscal 1986 and at least every four years thereafter.

Mandated in the 1984 Deficit Reduction Act, the PROPAC pacemaker report estimated that pacemaker DRG payments cover from 84% to 109% of hospital costs for these services. Since this compared to an average of 90% for DRG payments for all hospital discharges, PROPAC concluded that the current pacemaker payments are "appropriate."

PROPAC did find problems in the 1981 data used to construct the pacemaker DRGs. The report suggested that some of the problems may disappear under the DRG system's incentives for better record-keeping and more efficient care,

however. It concluded that a special adjustment was not justified now because the same problems affect all other DRGs as well and because some of the data may have understated DRG costs while other data overstated it, leaving the overall impact on the pacemaker prices unclear.

The report entitled "A Report on the Appropriateness of Medicare Hospital Payments for Pacemaker Implantation" was presented to the House Ways and Means and Senate Finance Committees. It is available by writing to PROPAC at 300 7th Street, SW, Suite #301B, Washington, DC 20024 or by calling 202/453-3986.

* * * *

Florida HMOs

The Reagan Administration proceeded with a new Medicare HMO option even though it was aware of administrative snarls that indicated that "the federal government cannot operate the program in one state let alone the other 49," Rep. Larry Smith (D-FL) has charged.

Smith based his comments on a General Accounting Office study he requested after problems developed in four Medicare demonstration HMOs in south Florida. The study pointed to program administration difficulties at the Florida Blue Cross and Blue Shield Plan and within the Health Care Financing Administration.

HCFA retorted that the problems GAO identified in Florida "do not currently exist" and said it is "unfortunate" that the GAO left the "impression that problems experienced in the demonstration projects have either been ignored nor not corrected, which is not the case."

A Blue Cross and Blue Shield spokesman said the plan had not yet seen the GAO report.

The four Florida HMOs have enrolled about 112,000 Medicare members, or about half of all Medicare enrollees in 26 HMO demonstration plans that served as a pilot for a Medicare prospective payment option. The option, which went into effect February 1, is expected to encourage up to 800,000 Medicare beneficiaries to switch to HMOs or similar plans in the next few years and to double the current number of Medicare HMO enrollees. Concerns such as those raised in Florida had prompted Rep. Smith and the American Medical Association to seek delays in the implementation of the option.

Although a later GAO study will look at the quality of care provided in the HMOs, HCFA estimates that about 96% of the complaints about the Florida HMOs have revolved around administrative issues, particularly the enrollment and disenrollment procedures.

The current study found two basic flaws in the Florida demonstration. The first involved an error-ridden process for coordinating Medicare HMO payments with the traditional Medicare program's payment. The second centered on a four to eight week waiting period between the time the beneficiary enrolled in or left the HMO and the date on which his new coverage began.

A central factor in the payment coordination problem, according to GAO, was a faulty federal computer system that could not identify whether a Medicare beneficiary was an HMO member until 16 to 37 days after the individual had enrolled in or disenrolled from the HMO.

The federal record of enrollment is important to enforce a provision "locking" beneficiaries in to the services of the HMO and preventing payments for both the HMO coverage and the non-HMO services that would have been provided under the traditional Medicare plan.

In looking at about nineteen months worth of claims for the Florida HMO members, GAO found that of 6,737 Medicare beneficiaries (or 6.4% of the Medicare HMO enrollees) ran up about $2.6 million worth of bills for physician services outside of and unauthorized by the HMO.

About $700,000 of the claims were paid by the Blues plan even though they should have been denied and even though in some cases the HMO had also paid for these services. Another $1.9 million in claims were correctly denied by the Blues, but caused problems for some beneficiaries who faced substantial bills that for 64 patients totalled $5,000 each or more.

In the majority (53%) of these 64 cases, the HMO paid the bill more than $13,000 in one case either because it had authorized the service or becaused it believed the beneficiary was not at fault or could not afford to pay.

In another 22% of cases, the physicians who had provided the out-of-plan services went without payment. The unpaid bills totalled more than $26,000 in the case of one 70-year-old-man.

* * *

Mandatory Second Opinions

Medicare might save more than $1 billion a year if patients recommended for nine types of elective surgery were required to seek a second opinion, according to a report from the Senate Aging Committee.

The report, estimated that the nine types of

surgery (pacemaker, cataract, gall bladder, prostrate, knee, hysterectomy, back, hernia and hemorrhoidectomy) are performed unnecessarily in 17% to 35% of cases. It projected Medicare savings of $734 to $1.18 billion.

Senate Aging Committee Chairman Sen. John Heinz (R-PA), who released the report at a March 14 hearing, said he may introduce legislation to require second surgical opinions in Medicare and Medicaid. Other committee members, including ranking Ohio Democrat John Glenn, appeared ready to cosponsor such legislation, which Heinz indicated that he may push as a substitute for budget proposals to increase beneficiary cost-sharing.

Heinz is siding with Department of Health and Human Services Inspector General Richard Kusserow in a long-simmering dispute with the Health Care Financing Administration. The dispute traces back to the IG's recommendation in early 1983 that Medicare and Medicaid require second surgical opinions for the nine procedures.

Medicare has paid for voluntary second opinions since 1977 and both the IG and HCFA agree that the voluntary program has had little impact on surgical rates. Both offices also concur that Medicaid programs mandating second opinions for selected procedures appear to have saved money $1 million a year in Massachusetts, for instance.

Both also agree that most savings from the mandated second opinions are not directly due to patient's foregoing surgery but stem instead from the "sentinel effect" in which physicians simply don't recommend certain procedures because they are aware that their decision will be questioned. About 90% of the Massachusetts savings were attributed to the "sentinel effect," for example.

As replayed before the Aging Committee, however, the argument between the two HHS agencies really centers on what mechanism should be used to produce the desired sentinel effect. According to HCFA official James Scott, mandatory second opinions would merely duplicate the efforts of Medicare's new Peer Review Organizations and some state Medicaid review mechanisms. According to Kusserow, the PROs are an inadequate guard against unnecessary surgery because they have no authority to look at outpatient procedures.

A carefully-selected group of witnesses—including a witness from the American Association of Retired Persons and Cornell researcher Eugene McCarthy, MD, who has long advocated second surgical opinion programs—also called for mandatory Medicare second opinions. They said such programs offer an excuse for patients who fear they will offend their physician if they seek a voluntary second opinion.

Several of the witnesses suggested that physicians do not oppose second surgical opinions as much as their patients believe they do, and Kusserow asserted that mandatory second opinions might protect physicians against malpractice awards.

Medical organizations, including the American Medical Association, have generally supported voluntary second opinions but opposed mandatory plans. Several of the medical groups which had expressed an interest in testifying, however, were permitted only to submit statements after the hearing.

The Aging Committee report also noted that "coronary artery bypass surgery on older men has increased faster than any other type of surgery, rising 1,000% between 1971 and 1978." And several witnesses, including Kusserow, Dr. McCarthy and Harvard researcher and cardiologist Thomas B. Graboys, MD, suggested that addition of coronary bypass to the list of procedures for which second opinions are required would substantially increase savings.

* * * *

Senate Budget Resolution

A fiscal 1986 budget resolution, which could come up for a Senate vote by mid-April, calls for Medicare cuts of about $3 billion in fiscal 1986 and leaves room for reducing the impact of President Reagan's proposed freeze on Medicare physician fees somewhat. It assumes that all federal funding for health professions education will be eliminated.

The resolution, approved by the Senate Budget Committee in mid-March, still must be approved by the full Senate and any differences with a still-undeveloped House budget resolution resolved. It sets overall spending targets and provides guidance as to how the targets might be met. Congressional authorizing committees must meet the overall target for programs under their jurisdiction, but they are free to ignore the individual spending targets and the budget resolution's recommendations for meeting them.

The Budget panel's resolution includes about a billion less in Medicare savings than the Reagan Administration had proposed. It also lowered the savings anticipated from a physician fee freeze to $310 million in fiscal 1986—as compared with

a $500 million savings the President's budget had projected. The lower physician freeze savings stem primarily from the committee's assumption that the freeze will be applied only to MDs who did not sign Medicare participating agreements.

The American Medical Association has argued against continuing the Medicare freeze for any physicians unless it was part of a broad freeze on all domestic and defense spending. AMA lobbyists told the Budget Committee members that an extension of the freeze on physician fees would make physician reimbursement the "only area in the budget that would be frozen for two years" and would mean physicians were paid at 1982 levels in 1986.

The final committee plan also differs significantly from the earlier version in that it includes an increase in beneficiary costs. Although the initial proposal had spared beneficiaries entirely, the final measure would increase Part B monthly premiums from the current 25% of costs ($15.50 a month) to 35% of costs (estimated at $34.90) in 1990. Beneficiaries would also be required to pay a new fee for home health visits after the first 20.

The plan also assumes that Medicare rates for hospitals would be frozen in fiscal 1986 and accepts the President's plan to halve payments for indirect medical education costs in 1986. Payments for the direct costs of medical education would be frozen.

For Medicaid, the budget panel opposed the President's proposed freeze on the federal share of benefits. The committee did, however, add a provision that would eliminate the federal contribution to Medicare Part B premiums states pay on behalf of Medicaid beneficiaries. Estimated savings are $300 million in each of the next three years.

The committee's resolution also endorses the Administration's plan to wipe out funds for health planning and health professions assistance in fiscal 1986. In addition, federal funding for guaranteed student loans for all areas of higher education would be reduced by $200 million in 1986. Funding for other discretionary health programs would be frozen and a 5,500 limit would be placed on new biomedical research grants from the National Institutes of Health.

* * * *

Patient Protection Act

The American Medical Association is now warning medical licensing boards of about 40 cases a month in which an MD licensed in several states has just been disciplined by one of the jurisdictions, the AMA told Members of the House in March.

The effort, undertaken with the Federation of State Medical Licensure Boards, followed a three-state study by the General Accounting Office that found that 10% of practitioners whose licenses were revoked in one state later billed Medicare or Medicaid for treating patients in another state.

Under current law, Medicare and Medicaid generally can exclude these practitioners only if they are convicted of fraud or abuse against the particular program involved. The GAO recommended that the Department of Health and Human Services be given authority to exclude from participation in federal health programs any practitioner who has been convicted of fraud or abuse in another federal program or whose license had been removed by a state licensing board.

Although the recommendation was supported at the time by the HHS Inspector General as well as by the AMA and other professional groups, differences developed over legislation to implement the recommendation. Swept aside as Congress got tied up in budget bills at the end of the last session, the legislation has now been reintroduced, and as a recent hearing before the House Ways and Means and Commerce health subcommittees revealed, several differences remain.

Called The Medicare and Medicaid Patient and Program Protection Act of 1985 (HR 1370), the measure was introduced by Rep. Henson Moore (R-LA) and cosponsored by many of the members of the two subcommittees. It would authorize the Department of Health and Human Services to exclude from federal health programs any provider who has been convicted of financial, patient or controlled substances abuse; who has lost or surrendered for cause a medical license or the right to participate in any federal program; or who has furnished excessive or poor quality care. An HMO could be excluded for not providing an adequate number of services.

Providers could also be excluded for failing to grant access to records or information about subcontractors or if a civil monetary penalty had been assessed against them. All exclusions would be for a minimum of five years. States would be required to notify a clearinghouse at HHS or an organization designated by HHS of disciplinary actions by state licensing boards.

Although the thrust of the bill is supported by

patient representatives, physician groups and the Inspector General, some medical groups believe the legislation now goes beyond the original recommendations of the GAO while senior citizens organizations believe it does not go far enough. Debate has centered on the five-year minimum exclusion, the HHS clearinghouse, and the exclusions of physicians or HMOs providing excessive or inadequate numbers of services.

Testifying for the AMA, Board of Trustees member John Ring, MD, described the Association's use of its physician masterfile to notify the state boards of disciplinary actions against MDs licensed in more than one jurisdiction. He also reported that this effort will be expanded to notify the boards whenever the AMA learns of a physician's death.

While endorsing legislation to bar physicians who lose their license for incompetence from Medicare and Medicaid, however, Dr. Ring raised several concerns with HR 1370. The five-year minimum exclusion from federal programs does not give HHS enough discretion to deal with the "various levels of culpability" or fraud that might be encountered, he argued. An HHS clearinghouse of state disciplinary actions would duplicate efforts already taking place, and the authority to exclude providers who deliver excessive or poor quality care has been given and should remain with Peer Review Organizations (PROs).

Defending the minimum five-vear exclusion. HHS Inspector General Richard Kusserow asserted that any provider that defrauds Medicare or Medicaid should be excluded from the programs "for as long as the earth spins on its axis."

The most significant difference between HR 1370 and its predecessor in the last Congress involves the addition of authority to exclude HMOs that fail in a substantial number of cases to provide all the services a patient needed. Although Kusserow and General Accounting Office official Michael Zimmerman endorsed this revision, HMO representatives contended that it is unnecessary.

Two groups representing the elderly argued that HR 1370 should be strengthened by requiring rather than permitting exclusion for certain types of fraud or abuse and by requiring public disclosure of state licensing board actions and PRO data.

The two House health subcommittees are also considering a companion bill (HR 1091) introduced by Rep. Ron Wyden (D-OR). Titled the Medical Impostors Act, the bill authorizes HHS to impose civil penalties and seek criminal sanctions against anyone who misrepresents himself as a licensed physician or as a specialist in a field in which he is not certified. The bill drew the whole-hearted support of the Inspector General and the qualified support of the AMA after Wyden agreed to work with the Association to clarify that the provision regarding specialty misrepresentation is aimed only at physicians who claim a specialty in an area of medicine for which they are not trained or qualified.

* * * *

Pennsylvania PRO Programs

Federal Medicare officials, displeased with a logjam of unreviewed claims and other performance problems have notified the five month old Pennsylvania Peer Review Organization (PaPRO) that the PRO's contract will be terminated unless the 53,000 claims backlog is eliminated by June 20.

The action came after officials with the Health Care Financing Administration rejected two corrective action plans submitted by the PRO. HCFA did, however, agree to release contract funds that had been withheld from the PRO in December, January and February.

PaPRO may still retain its contract to review the claims for hospitalized Medicare patients if it eliminates the claims backlog and meets other commitments handed down by HCFA officers. The notification of intent to terminate puts HCFA officials in a position of initiating negotiations for a new PRO contract in Pennsylvania in the interim, however, if it appears that PaPRO will not meet the commitments.

* * * *

CBO Budget Options

Congress could consider several alternatives to President Reagan's proposal to continue a freeze on all physicians' Medicare fees for another year, the Congressional Budget office has suggested.

One alternative would permit fees to rise for some physicians who signed Medicare participating agreements in fiscal 1985. Others are variations on a Medicare fee schedule.

Spelled out in a recent CBO report entitled "Reducing the Deficit Spending and Revenue Options," the package of alternatives also offers provisions to moderate the President's recommended reductions in Medicare payments for graduate medical education. It offers no alternatives to hospital rates.

Suggested revenue-raising proposals include a tax on employer-paid health insurance premiums and several alternatives for increasing Medicare premiums, deductibles and taxes. The CBO hikes in Medicare premiums, deductibles and taxes would cost beneficiaries more than the President's proposals.

In looking at curbs on Medicare payments to physicians, the CBO estimated that the Reagan Administration's plan to extend the current freeze on Medicare customary and prevailing fees until October 1, 1986, would save $490 million in fiscal 1986 and $3.2 billion through 1990.

As an alternative, the Budget office suggested, Congress could update the customary fee allowances for individual participating physicians. Since the ceilings on then prevailing community rates would remain frozen, only participating physicians with fees lower than the prevailing fee ceiling would receive fee increases. Or, the report advised, Congress could pay physicians according to a fee schedule based on the national average allowed for each procedure in the previous year. The schedule would be adjusted for regional cost variations and updated in following years by the increase in the Medicare economic index.

* * * *

Super PRO

Having scaled down their demands for a contractor to monitor Medicare's Peer Review Organizations (PROs), Health Care Financing Administration officials are preparing to reopen bids for the so-called Super-PRO contract.

All four bids in an earlier round of bidding, including one from the American Medical Association were turned down as nonresponsive, reportedly in large part because they exceeded the funds available for the contract.

Although HCFA officials said they could not discuss funding in a competitive bidding situation, they did acknowledge that the work load the Super-PRO will be asked to perform has been reduced. Industry sources said they believed HCFA wants to hold the price of the contract to about $5 or $6 million.

In addition to the usual notification in the Commerce Business Daily, the Medicare officials are seeking widespread press announcements of the latest bid solicitation. The objective is to bring the contract to the attention of more potential bidders. A request for bid proposals (RFPs) was to be carried in Commerce Business Daily in early April.

This new solicitation differs from the earlier one in that it appears to be worded so as to appeal to a wider variety of organizations. It also requires semi-annually reports rather than quarterly and has reduced the types of review requested.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

WHAT IS NEW IN THE TREATMENT OF TYPE 11 DIABETES

Presented by Larry Stonesifer, M.D., *July 16, 7:00 p.m.,* L J's Restaurant, Fayetteville. One hour Category I credit. Sponsored by UAMS AHEC-NW.

BACTERIAL PNEUMONIA

Presented by Kevin McCusker, M.D., *August 22, 7:00 p.m.,* L J's Restaurant, Fayetteville. One hour Category I credit. Sponsored by UAMS AHEC-NW.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC-South Arkansas.
Colposcopy-Pap Smear Clinic, fourth Tuesday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, second and fourth Thursday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pediatric Conference, second and third Friday, 12:30 p.m. to 1:30 p.m., (second Friday, Warner Brown Hospital, third Friday, Union Medical Center).

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Radiology Conference, third Thursday, 1:00 p.m., Conference Room.
Pathology Conference, second Thursday, 3:00 p.m., Conference Room.
ICU Lecture Series, second Friday, 1:30 p.m.
Peer Exchange, information not available. Contact VAMC for further information.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Respiratory Care Case Conference, each Wednesday, 1:00 p.m., Second Floor Classroom.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neurology Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, second Floor Classroom.
General Pediatric Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Surgery Conference, each Monday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pathology Conference, first, second, fourth and fifth Thursday, 12:00 noon to 1:00 p.m., Pathology Library.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #2.

LITTLE ROCK — ST. VINCENT INFIRMARY

Interhospital GI Problems Conference, first Monday, 6:00 p.m. to 7:30 p.m., Classroom 3, Education Wing.
Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.

Interhospital GI Problems Conference, first Monday, 6:00 p.m., St. Vincent Infirmary, Classroom 3, Education Wing.
OB/Gyn Grand Rounds, each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/135.
Mental Health Services Grand Rounds, dates TBA. 10:00 a.m., Arkansas Mental Health Services Administration Building, third floor conference room.
Psychiatry Grand Rounds, each Thursday, 12:00 noon, UAMS Child Study Center Auditorium.
Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Ed II Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS Ambulatory Care Center Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Ed II Building, Room G/135.
Arkansas Academy of Pathology, first Wednesday, 5:30 p.m., Coy's Restaurant.
Surgical Science Conference, each Saturday, 8:00 a.m., Ed II Building, Room G/131.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) at 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Psychiatry Service Lecture Series, each Wednesday, 1:00 p.m., NLRVA, Building 170.
VA Medicine Service Teaching Conference, each Monday, 3:30 p.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC-SOUTHWEST

Tumor Conference, July 3, 7:00 a.m., St. Michael Hospital.
Chest Conference, July 17, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

THINGS TO COME

August 1-4

38th Annual Scientific Assembly, Arkansas Academy of Family Physicians. Statehouse Convention Center and Excelsior Hotel, Little Rock. The program is acceptable for 17 Prescribed Hours. Registration fee is $100 for members if paid by June 15; after that date, the fee is $150. Registration fee for non-members is $150 if paid by June 15; after that date, the fee is $175. Residents may register for $10; there is no registration fee for students.

Optional "hands on sessions" are available. Registration fees are $100 for members; $125 for non-members for one of the following: (1) Colposcopy, (2) Treadmill Stress Testing, (3) Flexible Sigmoidoscopy, (4) Cryosurgery, or (5) Non Invasive Diagnosis of Vascular Disease. These courses will be held Thursday, August 1, from 8:00 a.m. to 12:00 noon.

The Scientific Program has been announced as follows:

Thursday, August 1,
Harold Hedges, M.D., Moderator

1:00 p.m. Medical Marketing
Andrew P. Morley, M.D., President, Georgia Academy of Family Physi-

cians and Past Chairman, AAFP Public Relations Committee

3:00 p.m. Practice Pearls
James R. Weber, M.D., Associate Clinical Professor, Department of Family and Community Medicine, University of Arkansas College of Medicine

4:00 p.m. Computers in a Medical Practice
Herbert Fendley, M.D., Vice President, Automated Medical Systems, Inc., Little Rock

Friday, August 2, Morning Session,
Robert Holder, M.D., Moderator

8:30 a.m. Sports Medicine—An Overview
Kurt M. W. Niemann, M.D., Professor and Director, Division of Orthopaedic Surgery, University of Alabama, Birmingham

9:30 a.m. Indications for Holter Monitoring
James E. Boger, M.D., Assistant Clinical Professor of Cardiology, Department of Medicine, University of Arkansas College of Medicine

11:00 a.m. Magnetic Resonance Imaging
Robert W. Laakman, M.D., Radiology Associates, P.A., Little Rock

Friday, August 2, Afternoon Session,
Charles Rodgers, M.D., Moderator

1:30 p.m. Ampicillin Resistant Hemophilus Influenza
Terry Yamauchi, M.D., Professor of Pediatrics and Chief, Pediatric Infectious Disease, University of Arkansas College of Medicine

3:00 p.m. The Vaccine Controversy
Terry Yamauchi, M.D.

4:00 p.m. Classification and Management of Headaches
James Dexter, M.D., Chairman, Department of Neurology, University of Missouri School of Medicine, Columbia

Saturday, August 3, Morning Session,
Amail Chudy, M.D., Moderator

8:30 a.m. Estrogens, Menopause and Osteoporosis
Kermit E. Krantz, M.D., Professor and Chairman, Department of Gynecology and Obstetrics, University of Kansas College of Medicine, Kansas City

9:30 a.m. Management of the Premenstrual Syndrome
Kermit E. Krantz, M.D.

10:45 a.m. Our Changing Society—Geriatrics
James M. Turnbull, M.D., Professor and Chairman, Quillen-Dishner College of Medicine, Department of Psychiatry, East Tennessee State University, Johnson City

Saturday, August 3, Afternoon Session,
R. Jerry Mann, M.D., Moderator

2:00 p.m. Our Changing Society—Sexuality
James M. Turnbull, M.D.

3:15 p.m. Anatomy of a Medical Marriage (for registrants and spouse)
Gordon H. Deckert, M.D., David Ross Boyd Professor and Head of Department of Psychiatry and Behavioral Sciences, University of Oklahoma Health Sciences Center, Oklahoma City
James Chew Deckert, B.S., M.S., Medical Physiologist, Oklahoma City, Oklahoma

Sunday, August 4

9:30-
11:00 a.m. How to Fight Fair in a Medical Marriage (for registrants and spouse)
Gordon H. Deckert, M.D.
Jane Chew Deckert, B.S., M.S.

For further information, contact Carla Mayfield, Executive Vice President of the Arkansas Chapter of AAFP, 7509 Cantrell, Suite 236, Little Rock 72207; telephone 663-9075.

August 23-25

Southern Medical Associate Postgraduate Conference. Houston, Texas. Hour-for-Hour Category 1, AMA/PRA. Registration: $40 for SMA members; $55 for non-members. For further information, contact Jeanette Stone, Southern Medical Association, Post Office Box 190088, Birmingham, Alabama 35219-0088; telephone 1-800-423-4992.

September 9-13

1985 International Conference on Neurotoxicology of Selected Chemicals. Theme: Neurotoxicology in the Fetus and Child. The Excelsior Hotel, Little Rock. Volunteer platform and/or poster presentations are invited. The Abstract Deadline is August 15. For further information, please contact Dr. Joan M. Cranmer, Conference Chairman, Department of Pediatrics — #512B,

University of Arkansas for Medical Sciences, Little Rock 72205; telephone (501) 661-5997 or 661-5958.

1986

February 6-8

The Advanced Hair Replacement Surgery Symposium. Sponsored by the American Academy of Facial Plastic and Reconstructive Surgery. Stough Dermatology and Cutaneous Surgery Clinic and the Majestic Hotel, Hot Springs. The program is accredited for 16 hours in Category I. Registration fee is $525 for AAFPRS members if received before December 31; $575 after December 31. Non-member registration fee is $600 if received before December 31; $650 after December 31. Residents may register for $225. Fees include meals and social functions.

For further information, contact Kathleen Masterson, Congress Coordinator, The Stough Dermatology and Cutaneous Surgery Clinic, P.A., Doctors Park Building, Hot Springs 71901; telephone 624-0673.

March 24-29

Counseling Strategies for Physicians will include discussion of social change, family violence, addiction, human sexuality, and problems encountered in treating teenagers, minority groups, aging clients, and pregnant women. Sponsored by the University of Texas Health Science Center at Houston. Oahu, Hawaii. 17 Hours AMA/PRA Category I; AAFP Prescribed. Registration $325. For further information, contact 1-800-332-8747 (outside Texas) or inside Texas 1-800-392-4900-437, Program Code 975 DLB.



PERSONAL AND NEWS ITEMS

DR. BURNSIDE APPOINTED

Dr. Wade W. Burnside of Fayetteville has been appointed chief of staff at the University of Arkansas Student Health Service.

DR. DICKSON SPEAKS

Dr. Glenn Dickson of Jonesboro spoke at a seminar on sports medicine sponsored by St. Bernard's Regional Medical Center.

DR. HORAN

Dr. Douglas Horan of Little Rock is a new diplomate of the American Board of Dermatology.

DR. WILLIAMSON ELECTED

Dr. John Williamson of El Dorado was elected president of the Arkansas Ophthalmological Society at the recent meeting in Hot Springs. Dr. Jim Landers of Little Rock was elected vice-president.

DR. COLLIER SPEAKS

Dr. Steve Collier of Augusta spoke on "Strokes, Brown Recluse Spiders, and Trauma" at a recent meeting of the Augusta 50 Plus Club.

DR. PARKER SPEAKS

Dr. Lee Parker, Jr., of Fayetteville recently addressed the Washington County Health Advisory Council on the Impaired Physicians Program of the Arkansas Medical Society.

DR. TAYLOR LOCATES

Dr. Marsha Taylor, a General Practitioner, will practice in Greers Ferry under the auspices of the National Health Service Corp.

DR. GALBRAITH COMPLETES FELLOWSHIP

Dr. Robert C. Galbraith has completed a one-year leave-of-absence from Neurology Associates, P.A., during which he studied Neurophysiology, Epilepsy and Sleep Physiology at the University of Texas Health Sciences Center in Dallas. Dr. Galbraith will rejoin Neurology Associates at 8924 Kanis Road in Little Rock on July 1.

DR. APPLEGATE HONORED

In observance of Doctor's Day, the Springdale Memorial Hospital and the City of Springdale honored Dr. Stanley Applegate for forty years of service to his fellowman. Dr. Applegate is a past president of the Arkansas Medical Society.

DR. GUGGENHEIM APPOINTED

Dr. Frederick G. Guggenheim will become the

Marie Wilson Howells Professor and Chairman, Department of Psychiatry and Behavioral Sciences at the University of Arkansas College of Medicine on July 1. He replaces Dr. William G. Reese who held the position for over 34 years. Dr. Reese will continue his faculty duties.

OFFICERS ELECTED

Dr. Don G. Howard of Fordyce is the newly-elected chief of staff of Dallas County Hospital. Dr. Hugh A. Nutt is vice chief and Dr. John Delamore is secretary.

DR. SYKES CERTIFIED

Dr. James D. Sykes of El Dorado has been certified by the American Board of Quality Assurance Utilization Review Physicians.

DR. BERRY SPEAKS

Dr. Don Berry of Jonesboro spoke on "Christian Marriage" at special services of the Friendship Assembly of God Church in Jonesboro.

DR. JOHNSON LOCATES

Dr. Robert D. Johnson has opened an office at 225 Linden in Hot Springs for the practice of Pulmonary Disease.

DR. LIGON HONORED

Dr. Ralph E. Ligon of Pine Bluff was named Boss of the Year by the Pine Bluff Chapter of Credit Women International.

DR. AUSTIN MOVES

Dr. L. K. Austin, formerly of Monticello, has joined the Jonesboro Family Practice Clinic and the Trumann Family Practice and Acute Care Clinic.

DOCTORS HONORED

Dr. Durwood Wisdom of Jonesboro and Dr. Lowell V. Ozment of Camden were elected to membership in the national medical honorary society, Alpha Omega Alpha, with the 1984-85 initiates.

DR. WILLIAMS ON PROGRAM

Dr. C. D. Williams of Little Rock was one of the speakers at the International Cardiovascular Concave 1985 held recently at the Excelsior Hotel in Little Rock.

DR. NASH LOCATES

Dr. Dwayne Nash has opened an office in Stephens for the General Practice of Medicine.

DR. MEISENHEIMER HONORED

Dr. Martin P. Meisenheimer of Cherokee Village was honored by the Baptist Memorial Hospital-Eastern Ozarks for his five years of service to the community. Dr. Meisenheimer has recently retired from the practice of medicine.

DR. CLIFT SPEAKS

Dr. Steven A. Clift of North Little Rock spoke on "Colon-Rectal Cancer" at a cancer-awareness program sponsored by the American Cancer Society at the Park Hill Christian Church.

DR. ARAOZ SPEAKS

Dr. Carlos Araoz spoke at the April meeting of the Pulaski County Medical Assistants on "Alcoholism: Diagnosis Vs. Denial."

He also presented the April program for the meeting of the Little Rock Chapter of Alzheimer's Disease and Related Disorders.

DR. FEWELL JOINS UNIVERSITY

James E. Fewell, Ph.D., Assistant Professor of Pediatrics and Physiology at the University of Arkansas for Medical Sciences, has received a unique honor in being awarded an Established Investigatorship from the American Heart Association for the period from July 1, 1985, to June 30, 1990. He is currently Co-Director of the Perinatal Research Laboratory in the Department of Pediatrics and is doing research related to lung development in the fetus and circulatory control during sleep in newborns.

DRS. HUGHES AND KAIPA GUEST SPEAKERS

Dr. L. Milton Hughes and Dr. Siva P. Kaipa of Pine Bluff were guest speakers at the annual meeting of the Arkansas State Medical Assistants Society recently held in Pine Bluff.

DR. MOOSE APPOINTED

Dr. John Moose of Siloam Springs has been appointed to the Board of Trustees of John Brown University.

DR. WEISS SPEAKS

Dr. Gerald Weiss of Little Rock was a member of a panel for a Religion and Health Conference recently held at the John L. McClellan Memorial Veterans Administration Hospital in North Little Rock.

DR. CAMP APPOINTED

Dr. Arthur Camp of Hazen has been appointed to a three-year term on the Advisory Committee of the Stuttgart Memorial Hospital. Dr. Herd Stone of Holly Grove and Dr. Jerry Morgan of Stuttgart also serve on the committee.



NEW MEMBERS

DR. JAMES C. WELLBORN, JR.

Dr. Wellborn has joined the Arkansas County Medical Society. He was born in Beaumont, Texas.

Dr. Wellborn is a 1975 graduate of Washington and Lee University in Lexington, Virginia, and a 1979 graduate of the University of Arkansas College of Medicine. His internship and residency were with the University.

Dr. Wellborn is associated with the Stuttgart Medical Clinic for the practice of Surgery. His mailing address is Route I, Box 21-D in Stuttgart.

DR. ALLAN C. GOCIO

Dr. Gocio, a native of Bentonville, has joined the Garland County Medical Society.

He is a 1974 graduate of the University of Arkansas in Fayetteville and a 1978 graduate of the University of Arkansas College of Medicine. His internship was with the Baystate Medical Center in Springfield, Massachusetts. He served a Neurosurgery residency at the University of Arkansas from 1979 to 1984.

Dr. Gocio has joined Dr. James Arthur for the practice of Neurosurgery in Suite 1, 100 South Ridgeway, Hot Springs.

DR. PRABHAKARA REDDY

Dr. Reddy is another new member of the Garland County Medical Society. He is a native of India.

Dr. Reddy received his pre-medical education at NBKR College in India. He was graduated in 1973 by the Kurnool Medical College in India.

He served his internship at Kurnool General Hospital. Dr. Reddy trained in Pathology at Deaconess Hospital in St. Louis, Missouri. He also received training in Internal Medicine at the Mount Carmel Mercy Hospital in Detroit, Michigan, and served an Oncology Fellowship at M. D. Anderson Hospital and Tumor Institute in Houston, Texas. Dr. Reddy is board certified in Internal Medicine.

Dr. Reddy practices Medical Oncology in the Medical Arts Building, Suite 803, at 236 Central in Hot Springs.

DR. WILLIAM J. WRIGHT

Dr. Wright, a native of Hot Springs, has also joined the Garland County Medical Society.

Dr. Wright was graduated from Hendrix College in Conway in 1970 and from the University of Arkansas College of Medicine in 1974. He served a Straight Medicine internship and an Internal Medicine residency at the University of Tennessee College of Medicine.

He practiced for two years in Memphis, Tennessee, and four years in Austin, Texas. Dr. Wright is board certified in Internal Medicine.

Dr. Wright practices Internal Medicine at 211 Hobson in Hot Springs.

DR. ROBERT B. WALTON

Dr. Walton has joined the Independence County Medical Society. He was born in Clarksdale, Mississippi.

Dr. Walton is a 1975 graduate of the University of Arkansas at Fayetteville and a 1979 graduate of the University of Arkansas College of Medicine. His internship and residency were with the University Hospital in Little Rock. He is board certified in Internal Medicine.

Dr. Walton joined the Batesville Internal Medicine Clinic in July 1982. His mailing address is 501 Virginia Drive, Suite B, Batesville 72501.

DR. RUSSELL P. WEBSTER

Dr. Webster, a native of Caldwell, Idaho, has also joined the Independence County Medical Society.

He was graduated from the University of Arkansas at Fayetteville and from the University of Arkansas College of Medicine in 1979. His training in Family Practice was with the University. He is board certified in Family Practice.

Dr. Webster specializes in Family Practice. He is associated with the Northwest Arkansas Clinic in Batesville. His mailing address is Post Office Box 2116, Batesville.

DR. WILLIAM N. LIM

Dr. Lim is a new member of the Jefferson County Medical Society. He was born in Manila, Philippines.

He was graduated from the University of the Philippines in 1968 and from the University of the Philippines College of Medicine in 1972.

Dr. Lim served his internship at the Philippine General Hospital in Manila; his residency was served at the University of Arkansas Medical Center. He also served as an assistant professor at the University and at the Little Rock Veterans Administration Hospital. He is board certified in Radiology. Dr. Lim practices Radiology at 1801 West 40th in Pine Bluff.

DR. ALAN B. JEAN

Dr. Jean has joined the Miller County Medical Society. He was born in Walnut Ridge.

His pre-medical education was with the Arkansas State University in Jonesboro and the University of Arkansas in Fayetteville. He is a 1980 graduate of the University of Arkansas College of Medicine and served his residency at the University. He served as an instructor of Radiology at the University from 1983 to 1984.

Dr. Jean is associated with St. Michael's Hospital in Texarkana.

DR. DAC TAT PHAM

Dr. Pham is a member of the Monroe County Medical Society. He is a native of Hanoi, Vietnam.

Dr. Pham is a 1973 graduate of the Saigon University Faculty of Medicine. He served his internship with the Saigon Teaching Hospitals in Vietnam. His residency was with Mercy Catholic Medical Center in Darby, Pennsylvania.

Dr. Pham specializes in Family Practice and Emergency Medicine. His office is at 120 South Main in Brinkley.

DR. ANTHONY D. GEORGE

Dr. George, a native of Little Rock, has joined the Polk County Medical Society.

He is a graduate of Rice University in Houston. He was graduated from the University of Arkansas College of Medicine in 1981. Dr. George served an internship in Categorical Psychiatry with the Little Rock Veterans Administration Medical Center from 1981 to 1982. He also served an internship in Medicine with the University from 1982 to 1983 and his residency for Internal Medicine was with the University Medical Center from 1983 to 1985.

Dr. George practices Internal Medicine at 600 North Morrow in Mena.

DR. DONALD MATTISON

Dr. Mattison, a new member of the Pulaski County Medical Society, was born in Minneapolis, Minnesota.

He received his Bachelor of Arts degree in 1966 from Augsburg College in Minneapolis and his Master of Science degree in 1968 from Massachusetts Institute of Technology in Cambridge. Dr. Mattison is a 1973 graduate of Columbia University College of Physicians and Surgeons in New York. He received training in Obstetrics and Gynecology from 1973 to 1975 with Presbyterian Hospital in New York City.

Dr. Mattison served from 1975 to 1977 as a research associate with the Developmental Pharmacology Branch of the United States Public Health Service and National Institute of Health in Bethesda, Maryland. He returned to Presbyterian Hospital in New York for further training in Obstetrics and Gynecology from 1977 to 1978. Dr. Mattison was a Medical Officer with the United States Public Health Service and the Pregnancy Research Branch of the National Institute of Health in Bethesda from 1978 to 1983 and served as chief of the Section on Reproductive Toxicology/Pregnancy Research Branch of the National Institute of Child Health and Human Development from 1983 to 1984.

Dr. Mattison is presently serving as a United States Public Health Service Reserve Officer in the Division of Teratogenesis Research at the National Center for Toxicology Research in Jefferson, Arkansas.

Dr. Mattison is Director of the Division of Reproductive Pharmacology and Toxicology and Associate Professor of Obstetrics and Gynecology at the University of Arkansas College of Medicine.

DR. GORDON R. PARHAM

Dr. Parham is a new member of the Sebastian County Medical Society. He is a 1976 graduate of Hendrix College in Conway and a 1981 graduate of the University of Arkansas College of Medicine.

His training in Family Practice was with the Area Health Education Center in Fort Smith.

Dr. Parham practices Family Medicine at 922 Lexington in Fort Smith.

DR. JAMES S. GREENE

Dr. Greene, a native of Salinas, California, has also joined the Sebastian County Medical Society.

His pre-medical education was with the University of Arkansas at Little Rock; he is a 1981 graduate of the University of Arkansas College of Medicine. Dr. Greene received his training in Family Practice with the Area Health Education Center in Fort Smith.

Dr. Greene specializes in Family Practice at 922 Lexington in Fort Smith.

DR. WILLIAM PAUL KING

Dr. King is another new member of the Sebastian County Medical Society. He was born in Baytown, Texas.

Dr. King is a 1977 graduate of Texas A & M University and a 1981 graduate of the University of Texas Southwestern Medical School in Dallas. His residency was with the Area Health Education Center in Fort Smith.

Dr. King specializes in Family Medicine at 922 Lexington in Fort Smith.

DR. WEB ROSS

Dr. Ross, a native of Coos Bay, Oregon, has joined Tri-County Medical Society.

He was graduated from Hendrix College in Conway in 1977 and from the University of Arkansas College of Medicine in 1981. His internship was with Maricopa County General Hospital in Phoenix, Arizona.

Dr. Ross moved to Calico Rock in 1983 for the practice of General Medicine. He is associated with the Calico Rock Medical Center.

RESIDENT MEMBERS

The Jefferson County Medical Society has ten new members who are in the Family Practice Residency Program with the Area Health Education Center in Pine Bluff. The resident members and the medical schools they attended are:

DR. PHILLIP H. BELL, II, University of Texas Medical School in Houston, 1982

DR. J. T. CLARK, JR., University of Arkansas College of Medicine, 1983

DR. ROBERT D. DALBY, University of Arkansas College of Medicine, 1984

DR. PAUL DAVIS, University of Arkansas College of Medicine, 1982

DR. MARK A. FLOYD, University of Arkansas College of Medicine, 1982

DR. VIVIAN F. HIGHSMITH, University of Arkansas College of Medicine, 1982

DR. CHARLES R. HORTON, University of Arkansas College of Medicine, 1984

DR. ANNA T. RIDLING, University of Arkansas College of Medicine, 1984

DR. RICHARD L. TAYLOR, University of Arkansas College of Medicine, 1982

DR. BART THRONEBERRY, University of Arkansas College of Medicine, 1984

* * * *

DR. JOHN O. LYTLE

Dr. Lytle has joined the Pulaski County Medical Society. He is a 1982 graduate of the University of Arkansas College of Medicine. Dr. Lytle served a Transitional Internship with the University Hospital. He is currently serving an Orthopaedic residency at the Hospital.

RESOLUTIONS



DR. GEORGE S. NAPPER

WHEREAS, the membership of the Pulaski County Medical Society is saddened upon learning of the recent death of an esteemed colleague, George Spencer Napper, M.D., and

WHEREAS, he had been a valued member of this organization for the past thirty years and had earned the highest respect from his fellow physicians for his devotion to the practice of medicine, and

WHEREAS, Dr. Napper devoted his life to the betterment of the health of the citizens of this county.

BE IT THEREFORE RESOLVED:

THAT, we adopt this resolution and designate that it be made a part of the permanent archives of the Society, and

THAT, a copy be forwarded to Dr. Napper's family in order to convey our sense of deep sympathy, and

THAT, a copy be made available to the Journal of the Arkansas Medical Society for publication.

ADOPTED: Pulaski County Medical Society
April 17, 1985

DR. CHESTER S. CADWALLADER

WHEREAS, we the members of the Pulaski County Medical Society note with sincere sorrow the recent death of a colleague, Chester S. Cadwallader, M.D., and

WHEREAS, he had earned the respect of the medical community for his special knowledge of the practice of Physical Medicine and Rehabilitation in the two short years of his membership, and

WHEREAS, his devotion to the well being of

his patients was recognized by all physicians with whom he had contact.

BE IT THEREFORE RESOLVED:

THAT, this resolution be adopted and entered into the permanent archives of this Society, and

THAT, a copy be forwarded to the family of Dr. Cadwallader as an expression of our heartfelt sympathy, and

THAT, a copy be made available to the Journal of the Arkansas Medical Society for publication.

ADOPTED: Pulaski County Medical Society
April 17, 1985

OBITUARY

DR. E. LLOYD WILBUR

Dr. Wilbur of Little Rock died May 7, 1985. He was born in Council Bluffs, Iowa, on February 18, 1909.

His pre-medical education was with the Omaha University, Nebraska. Dr. Wilbur was a 1934 graduate of the University of Nebraska College of Medicine in Omaha. His residency training in Pathology was at Duke University in Durham, North Carolina.

Dr. Wilbur served from 1940 to 1943 as a professor of Pathology at the University of Arkansas College of Medicine. He was also a Pathologist for the Baptist Medical Center and a Pathologist and color consultant to the John L. McClellan Memorial Veterans Hospital in North Little Rock.

Dr. Wilbur authored numerous articles and was recognized as an authority in painting and graphic arts, color therapy and planning for institutions. He had served as president of the Arkansas Art League and as a lecturer on Christian art at the Grace Presbyterian Church in Little Rock. He was listed in the 1959 and 1968 editions of *Who's Who in America.*

Dr. Wilbur is survived by his wife, Elizabeth Godsey Wilbur, and one daughter.

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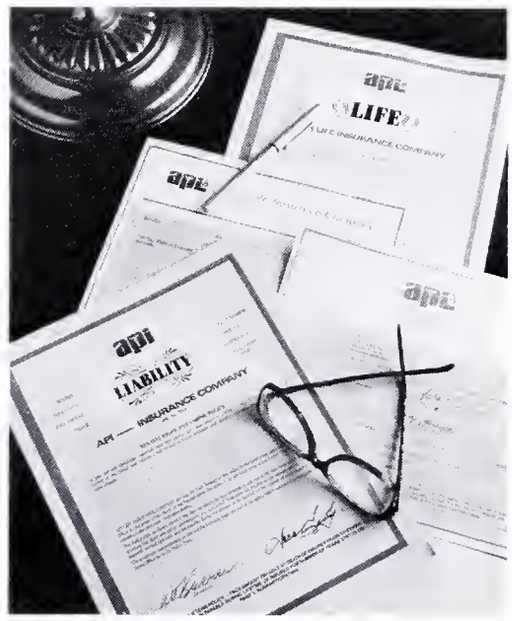
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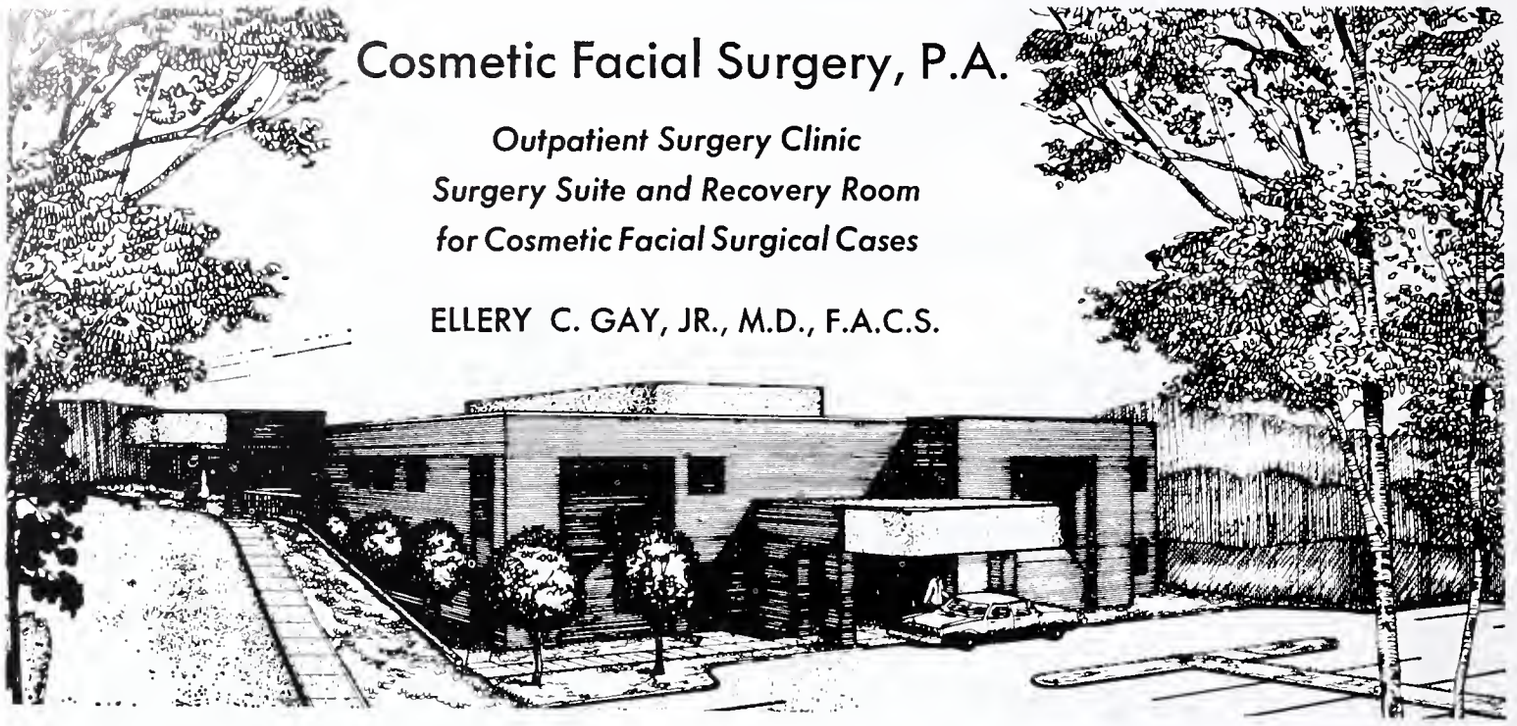
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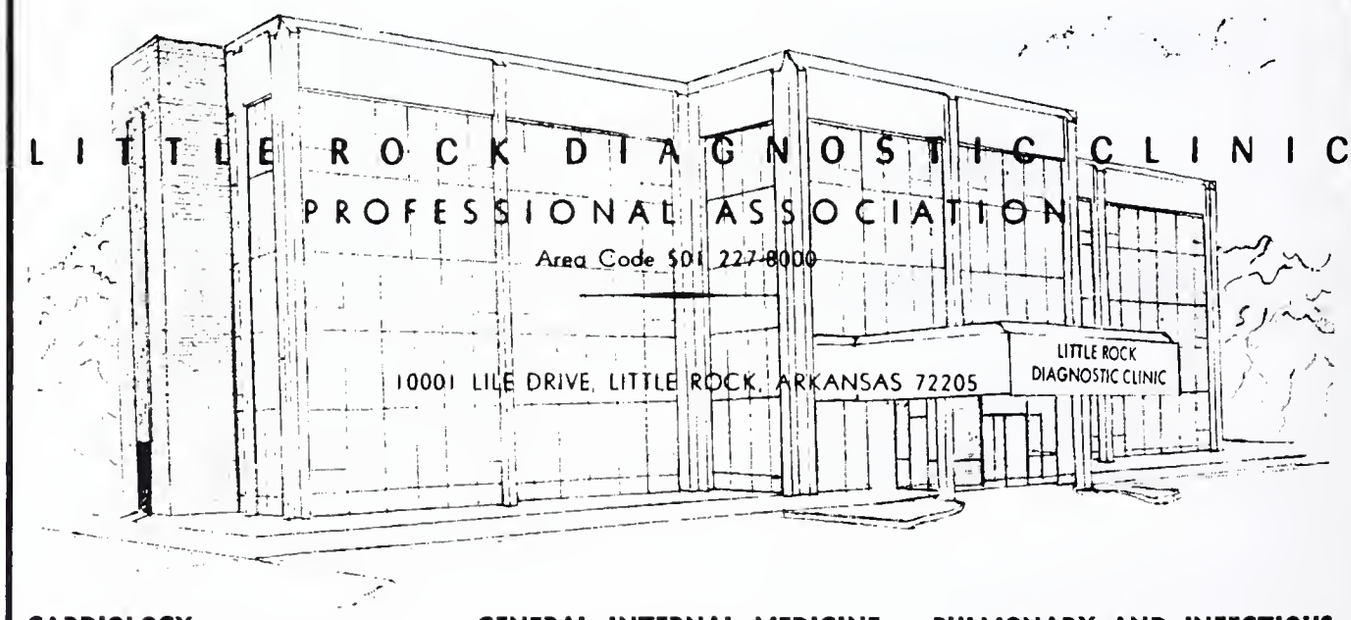
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Before prescribing, see complete prescribing information in SK&F CO. literature or *PDR*. The following is a brief summary.

WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

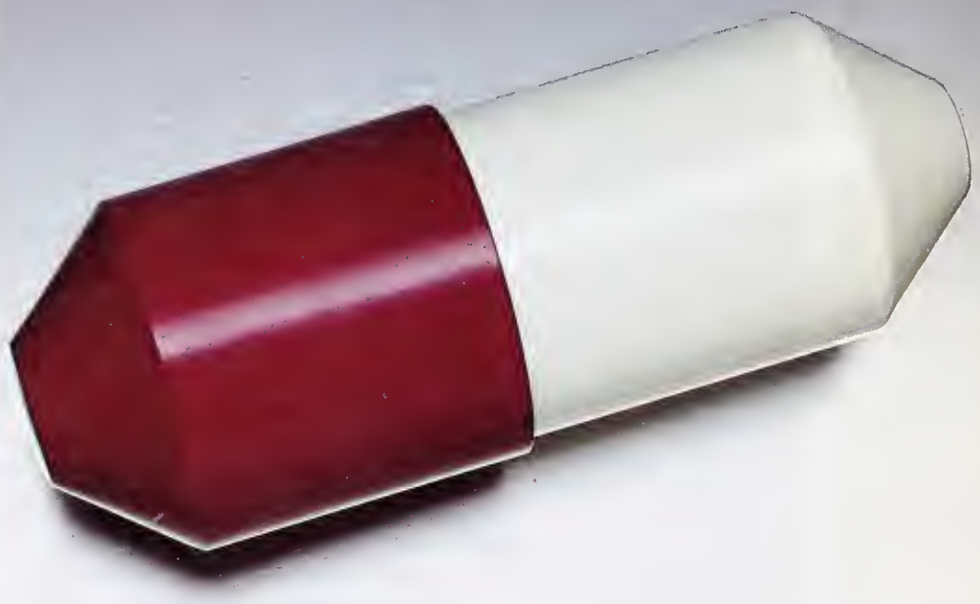
Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (Intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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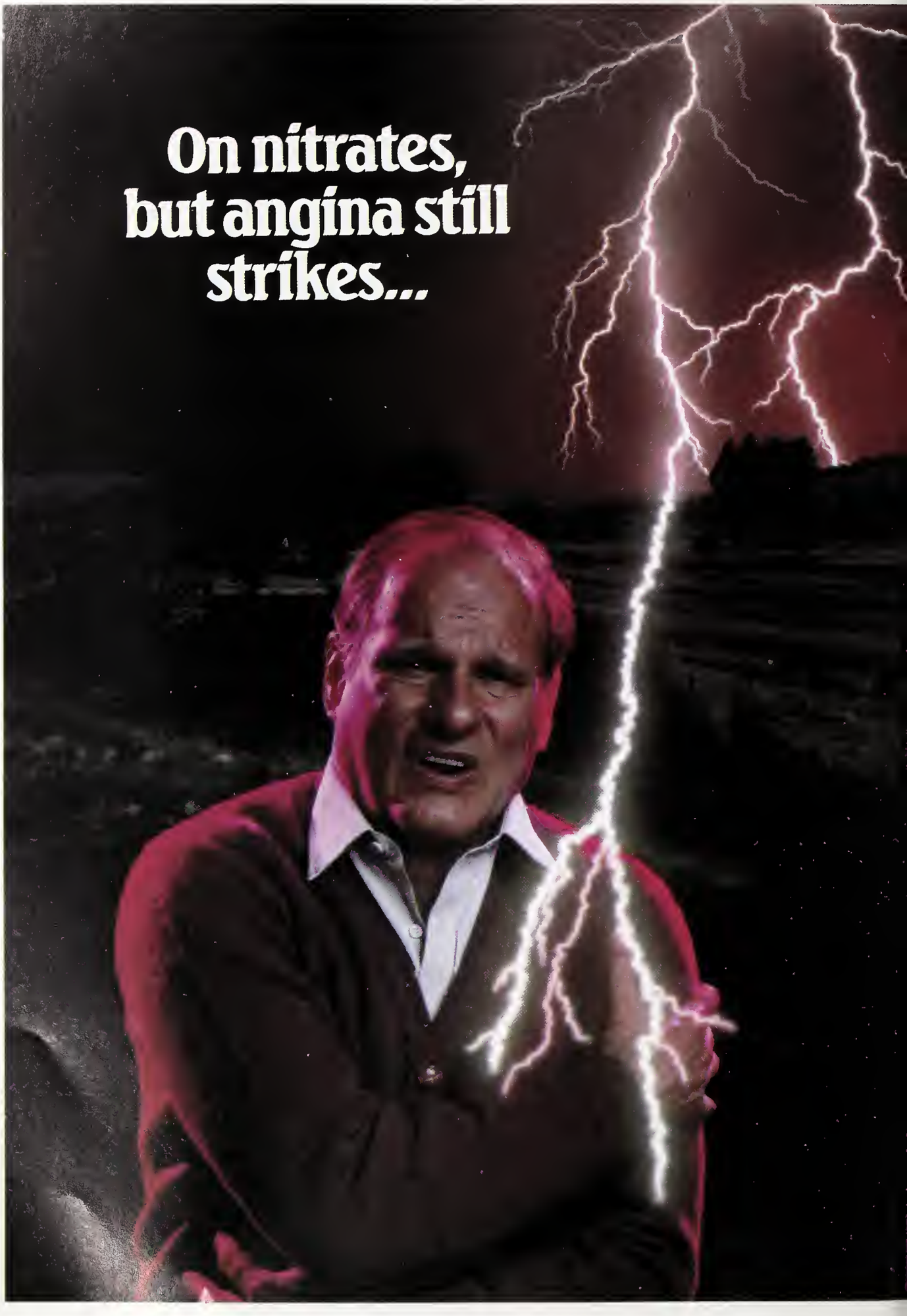


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Please see brief summary on following page.

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Contraindications: Severe left ventricular dysfunction (see *Warnings*), hypotension (systolic pressure < 90 mm Hg) or cardiogenic shock, sick sinus syndrome (except in patients with a functioning artificial ventricular pacemaker), 2nd- or 3rd-degree AV block. **Warnings:** ISOPTIN should be avoided in patients with severe left ventricular dysfunction (e.g , ejection fraction < 30% or moderate to severe symptoms of cardiac failure) and in patients with any degree of ventricular dysfunction if they are receiving a beta blocker. (See *Precautions.*) Patients with milder ventricular dysfunction should, if possible, be controlled with optimum doses of digitalis and/or diuretics before ISOPTIN is used. (Note interactions with digoxin under *Precautions*.) ISOPTIN may occasionally produce hypotension (usually asymptomatic, orthostatic, mild and controlled by decrease in ISOPTIN dose) Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions Adequate animal carcinogenicity studies have not been performed One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test *Pregnancy Category C*: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1 8%), fatigue (1 1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported (See *Warnings*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. 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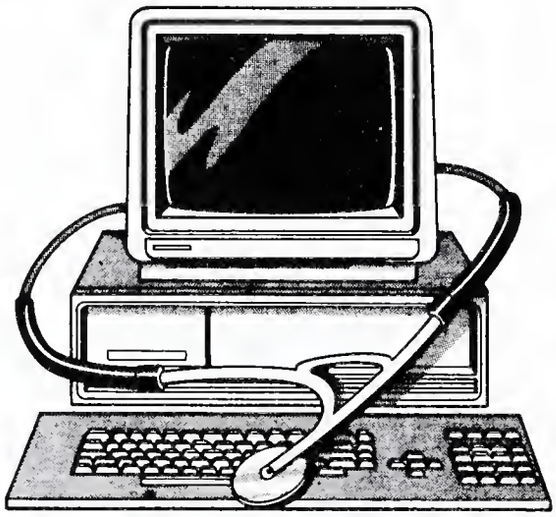
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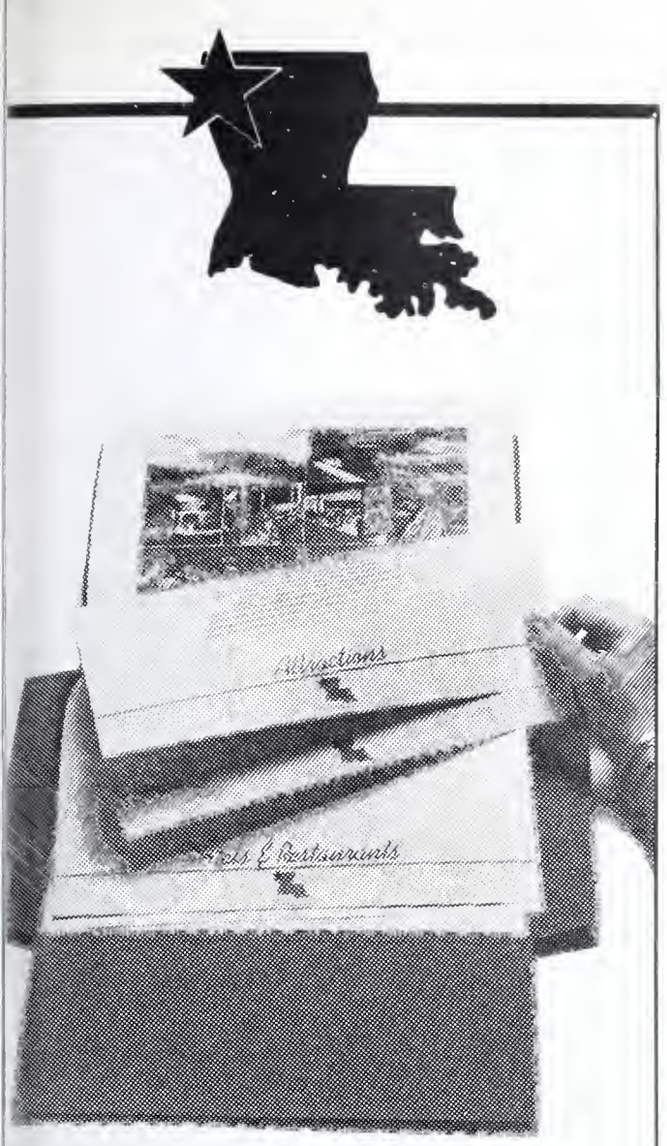
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Warnings: Not recommended in primary depressive disorders or psychoses. As with all CNS-acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

Physical and Psychological Dependence: Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addiction-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

Precautions: In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown; but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper G.I. disease. Safety and effectiveness in children under 12 years have not been established.

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PREGNANCY: Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chlordiazepoxide, diazepam and meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may be pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

NURSING MOTHERS: It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

Adverse Reactions, if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

Transient amnesia or memory impairment has been reported in association with the use of benzodiazepines.

Overdosage: In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

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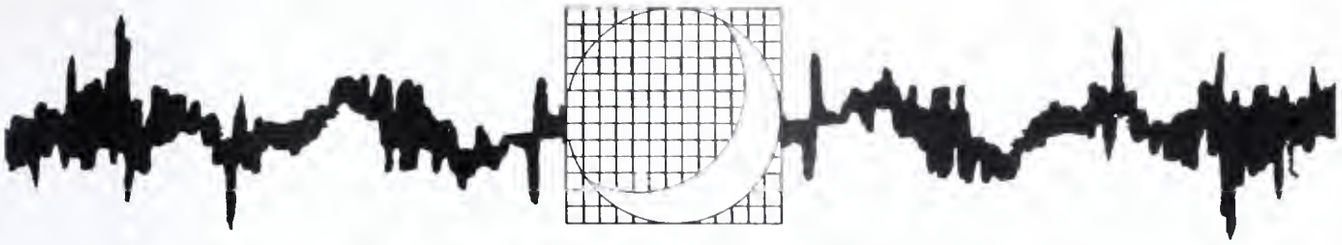
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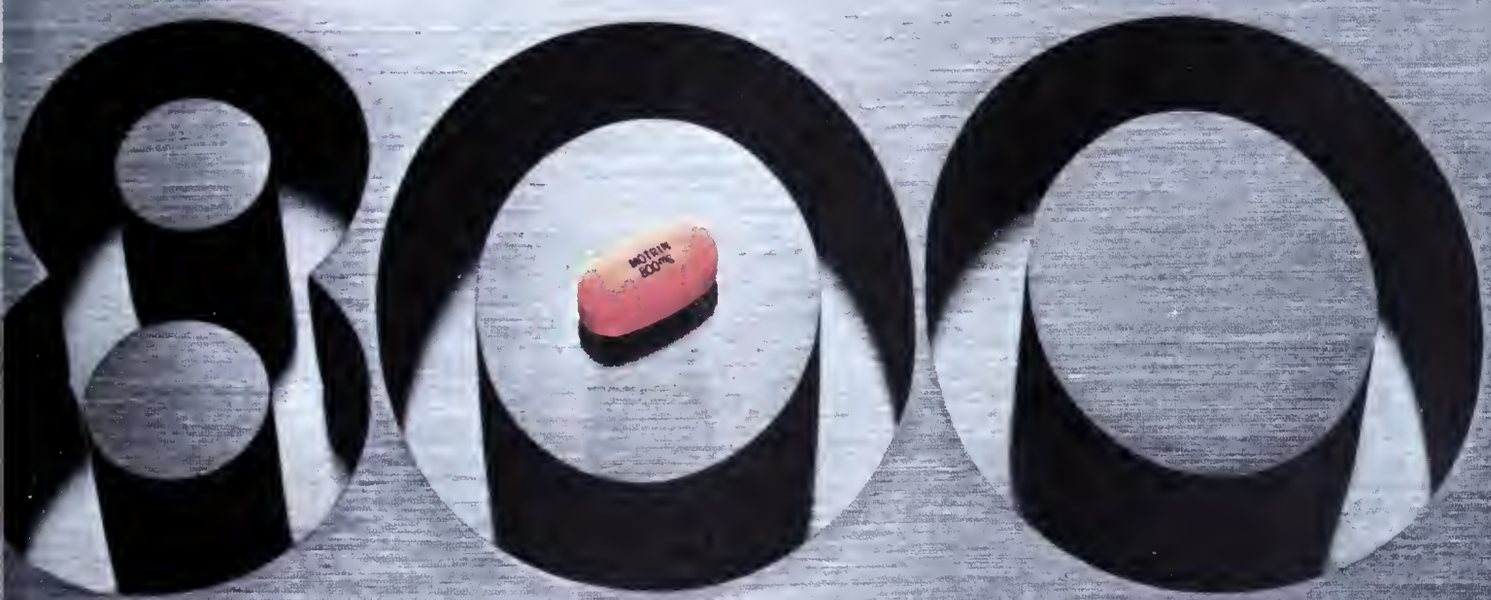
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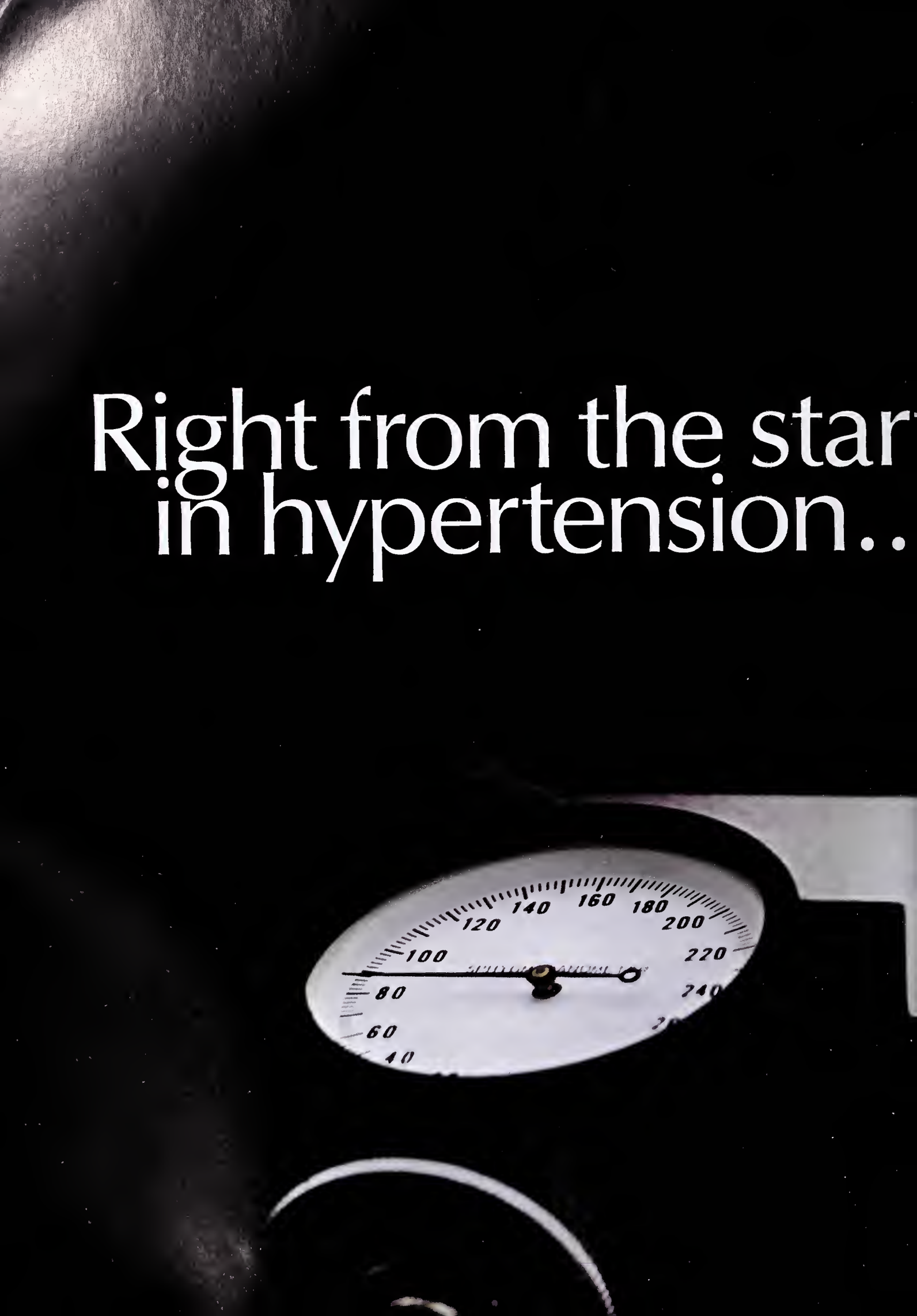
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BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)*
INDERAL® LA brand of propranolol hydrochloride **(Long Acting Capsules)**
DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 80 mg, 120 mg, and 160 mg capsules.
CLINICAL PHARMACOLOGY. INDERAL is a nonselective beta-adrenergic receptor blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of sympathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly dialyzable.
INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.
CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.
WARNINGS. CARDIAC FAILURE: Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)— PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA: Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.
PRECAUTIONS. *General:* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy: Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.
ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: lightheadedness; mental depression manifested by insomnia; lassitude; weakness; fatigue; reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal: nausea; vomiting; epigastric distress; abdominal cramping; diarrhea; constipation; mesenteric arterial thrombosis; ischemic colitis.

Allergic: pharyngitis and agranulocytosis; erythematous rash; fever combined with aching and sore throat; laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis; nonthrombocytopenic purpura; thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia; LE-like reactions; psoriasiform rashes; dry eyes; male impotence; and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.
DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized.* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized.* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized.* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

REFERENCES

1. Holland OB, Nixon JV, Kuhnert L: Diuretic-induced ventricular ectopic activity. *Am J Med* 1981;70:762-768. **2.** Holme I, Helgeland A, Hjermann I, et al: Treatment of mild hypertension with diuretics. The importance of ECG abnormalities in the Oslo study and in MRFIT. *JAMA* 1984;251:1298-1299.

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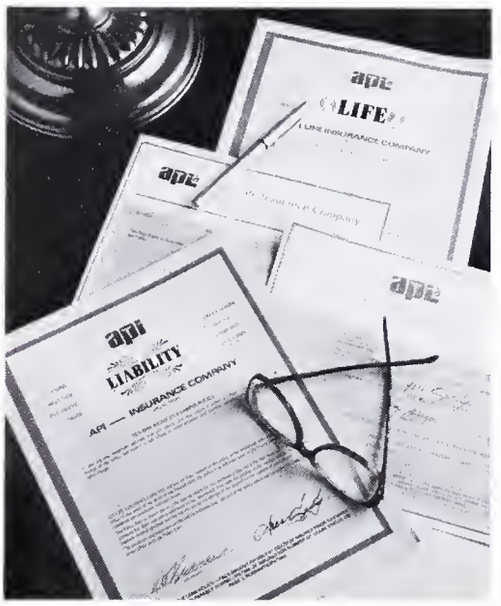
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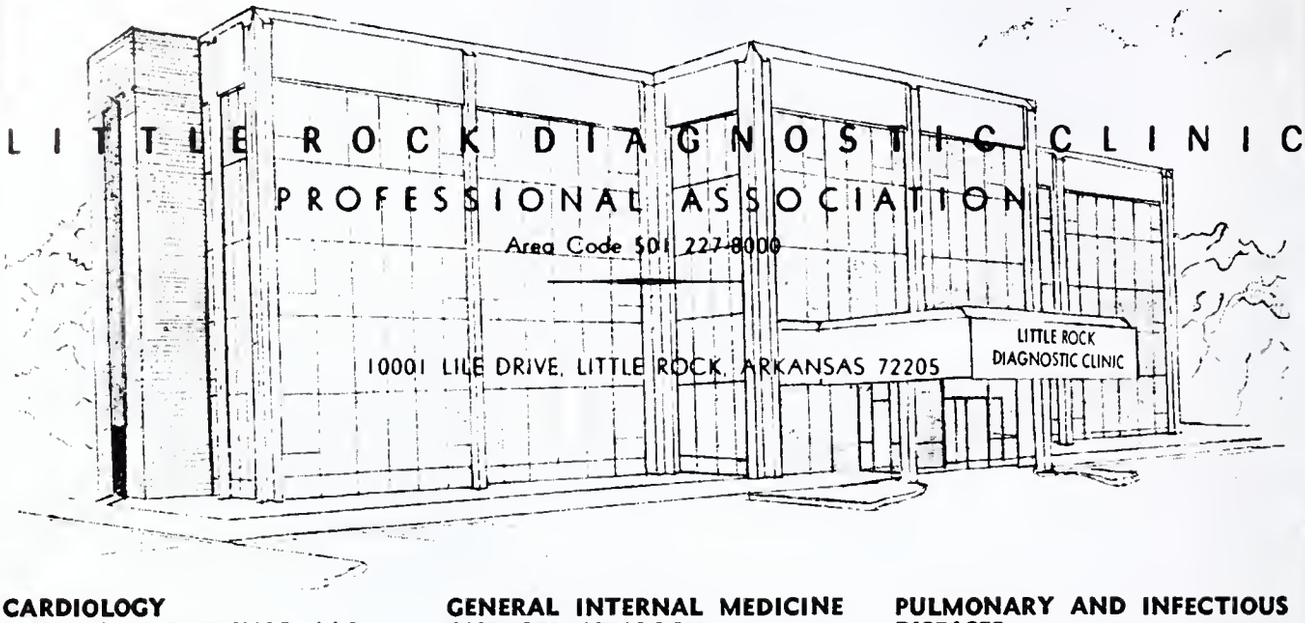
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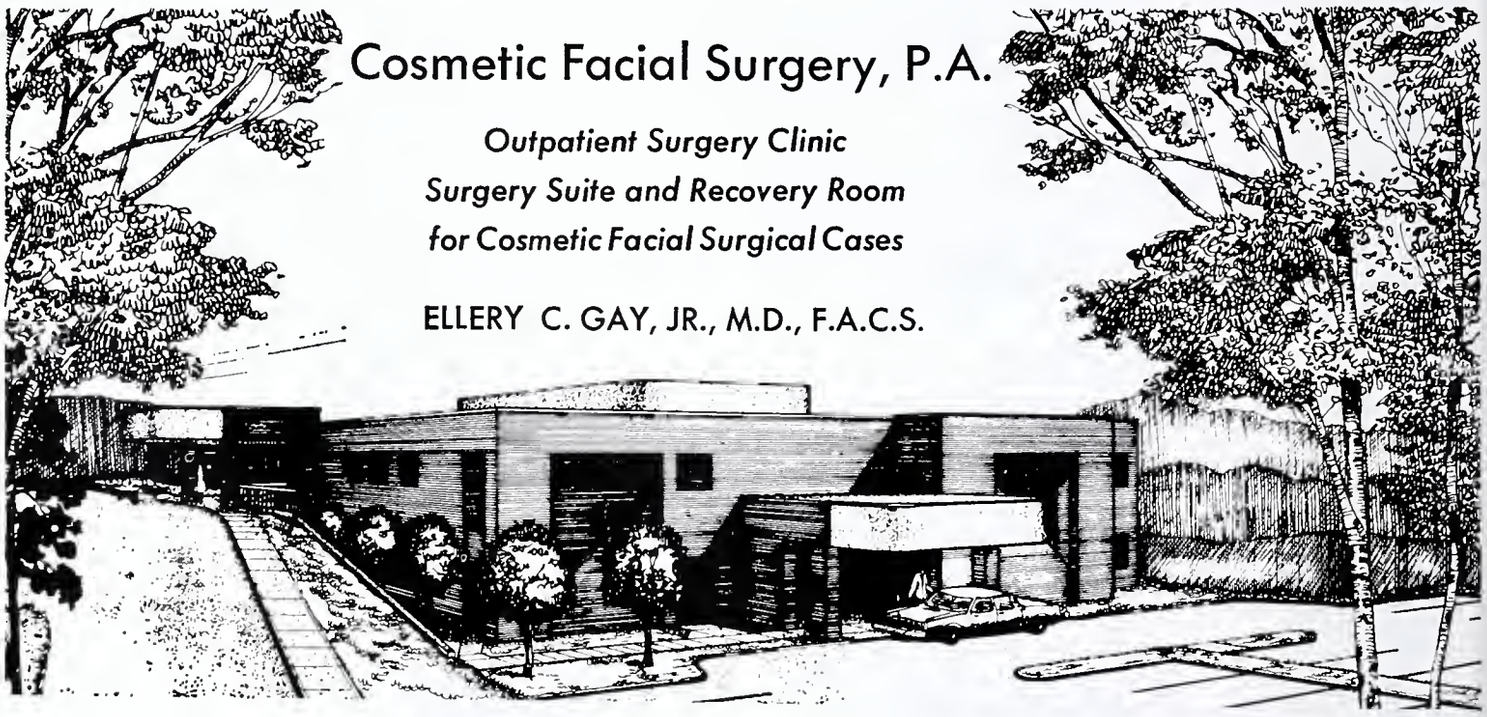
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The Spectrum of Esophageal Carcinoma

J. Michael Stair, M.D., and Johnny E. Brian, Jr., M.D.*

INTRODUCTION

Perhaps no other tumor of mankind is so miserable and deadly as carcinoma of the esophagus. Perhaps no group of cancer patients deserve palliation more than those afflicted with esophageal cancer. Prior to 50 years ago, there was no treatment or palliation for esophageal carcinoma and patients were doomed to suffer until relieved by death. Since 1932, when Ohsawa demonstrated that esophagectomy with esophagogastrostomy was surgically feasible, the therapy for cancer of the esophagus has improved. Although the cure rate for advanced esophageal malignancy has not appreciably changed in the last 20 years, there have been significant improvements in perioperative care, surgical technique, and diagnostic modalities to allow for earlier detection and safer palliation. New directions in multi-modality therapy may allow the possibility of cure of this dread disease in the future. This article will discuss the spectrum of esophageal carcinoma, its diagnosis, and its treatment.

Epidemiology and Risk Factors

Esophageal carcinoma (EC) is a world wide disease. Curiously, there is regional localization of extraordinarily high rates of EC. An area near the Tai Hang Shan Mountain Range in northern China, for example, has an incidence of EC of 130/100,000 population. In northern Iran, the incidence is 93/100,000 men and 110/100,000 women. The western French Provinces of Brittany and Normandy have an incidence of 60/100,000 men. The incidence of EC in white males is 2 to 5/100,000 in the U. S., Canada, Scandanavia, Australia, and most European countries. However, the incidence of EC in black males in the U. S. is 12 to 13/100,000 and is higher in urban areas. The highest incidence known is 246/100,000 among rural black males in South Africa.

The etiology of EC is unknown. The only known genetic predisposition seems to be in those individuals with tylosis (hereditary keratosis palmaris et plantaris), an autosomal dominant trait.[1] A few premalignant lesions are known: chronic iron deficiency (Plummer-Vinson syndrome), achalasia (retention esophagitis with cancer usually occurring in the middle third of the esophagus), corrosive esophagitis,[2] peptic esophagitis from chronic gastro-esophageal reflux, scleroderma and Barrett's esophagus have all been associated with the development of EC.

Heavy alcohol and tobacco consumption has been implicated as etiologically significant among cases in the United States, France, and a few areas in Europe. However, this does not explain the even higher incidence among the orthodox Moslems of Iran who neither drink nor smoke. Dietary factors have been implicated in this group. In some high risk areas such as China and Africa, nitrosamines have been identified in food as well as contamination by several species of fungi. Both nitrosamines and fungi have been shown to induce premalignant change in esophagi of laboratory animals.[3] Likewise malnutrition and vitamin deficiency have been incriminated as etiologically significant for EC in every endemic area. Indeed, poor nutrition and poverty seem to go hand in hand with esophageal carcinoma. It is unclear whether malnourished patients develop esophageal carcinoma, but it is clear that esophageal carcinoma leads to malnutrition. The etiology of EC is multi-factoral and seems to involve a wide variety of genetic and environmental factors.

Pathology

The esophagus is a muscular tube which is approximately 25.0 cm long. It courses from the cricopharyngeus (15.0 cm from the incisors) to the gastroesophageal junction (GEJ), approximately 40.0 cm from the incisors. By convention it is divided into five segments: cervical-from esophageal orifice to suprasternal notch, upper thoracic-from suprasternal notch to the carina of the trachea, middle thoracic-tracheal bifurcation to inferior

*From the Department of Surgery, University of Arkansas for Medical Sciences, 4301 W. Markham, Little Rock, Arkansas and John L. McClellan Memorial Veterans Hospital, 4300 W. 7th, Little Rock, Arkansas 72205.
Address reprints to Dr. Stair.

pulmonary vein, lower thoracic-from inferior pulmonary vein to diaphragm, and abdominal-from diaphragm to GEJ.

The middle third is the site for 50% of EC, whereas 30% of EC is found in the lower third and 20% is in the cervical and upper thoracic esophagus. There are a wide variety of esophageal tumors, both non-epithelial (e.g., melanoma, leiomyosarcoma, choriocarcinoma, rhabdomyosarcoma) and epithelial (e.g., carcinoid, adenosquamous, cylindroma, undifferentiated, carcinosarcoma).[4,5] However the most common form is epidermoid. In fact, squamous cell carcinoma accounts for 95% of EC with a majority of the remainder being adenocarcinoma. However, adenocarcinoma is rare and must be distinguished from adenocarcinoma of the gastric cardia. For our purposes we will consider only squamous cell carcinoma. Grossly, there are three basic type of esophageal carcinoma: fungating, ulcerative, and infiltrative. These gross varieties have little prognostic importance compared to depth of invasion, local extension, and nodal metastasis. Also, tumor differention is prognostically significant as poorly differentiated tumors are more likely to metastasize.

Staging of EC is by the TNM System. Tumor (T) is divided into six categories: m—confined to mucosa, sm—confined to sub-mucosa, mp—confined to muscularis propria, a1—invasion reaching the overlying adventitia, a2—invasion into the adventitia, and a3—invasion into neighboring structures. Nodal metastasis (N) is divided into five categories: NO—no metastasis, N1—metastasis to paraesophageal nodes of the involved segment, N2—metastasis to para-esophageal nodes of the adjacent segments, N3—metastasis to paraesophageal nodes of distant segments, and N4—metastasis to nodes beyond group N3. Organ metastasis is designated M1. The grouping of these categories to a coherent staging system is summarized in Table 1.



Figure 1.
Esophagram showing minimal irregularity of mucosa. This was an early carcinoma arising in a Barrett's esophagus (arrow).

Intra-esophageal and submucosal spread of esophageal carcinoma can be extensive. Most authorities suggest 10 to 12 cm proximal to the tumor and 5 cm distal to the tumor be resected to assure adequate tumor-free margins.[6] Inadequate excision can lead to anastomotic recurrence and dysphagia.[7] Extraesophageal spread into neighboring structures is not infrequent with EC. This spread may account for much morbidity and is the greatest single reason many tumors are unresectable for palliation or cure. Proximally, EC can invade into the thin, membranous posterior trachea, resulting in a malignant, often fatal tracheoesophegeal fistula.[8] Invasion into the recurrent laryngeal nerves, carotid sheath, vertebral bodies, pleura, lungs, diaphragm, and adventitia of the aorta can occur in advanced cases of EC.

Lymphatic spread is longitudinal rather than segmental and this may limit the effectiveness of radical local treatment. Fifty to sixty percent of patients have nodal metastasis at exploration.[9,10] Five year survival rates following esophagectomy decline from 50% without nodal metastasis to 10% when lymph nodes are positive.[7,9] Organ metastasis, usually liver or lung, are present in 90% of autopsy cases of esophageal carcinoma. However, organ metastasis rarely dominates the clinical picture as do dysphagia, inanition, and pulmonary problems.

DIAGNOSIS

Signs and Symptoms

Dysphagia is usually the first symptom of

TABLE 1

Stage	Tumor	Node Metastasis	Organ Metastasis
0	M, sm	N_0	M_0
I	Mp	N_0	M_0
II	a_1	N_1	M_0
III	a_2	N_2	M_0
IV	a_3	N_3, N_4	M_1

esophageal carcinoma. Two-thirds of the esophageal circumference must be involved with tumor to produce dysphagia. Although the earliest symptom, dysphagia usually develops late in the course of esophageal carcinoma. Weight loss, in spite of hunger, nearly always accompanies dysphagia. Anorexia usually implies widespread disease and is a poor prognostic sign. Regurgitation of food may accompany dysphagia; resulting pulmonary problems can dominate the clinical picture and complicate management. Weakness and fatigue are non-specific but usually present in patients with esophageal carcinoma. Pain may be severe and usually related to swallowing. Pain may also accompany bone metastasis or extensive local growth of tumor into the chest wall, vertebral bodies or mediastinal structures. Hoarseness from chronic aspiration or recurrent laryngeal nerve involvement may be present. Aspiration pneumonia may imply malignant tracheoesophageal fistula. Weight loss and malnutrition are the rule. Liver masses and pathologic fractures are rare and late manifestations.



Figure 2.
Early esophageal carcinoma with stricture formation.

Chest X-Ray

A chest x-ray should be obtained in all patients with esophageal carcinoma, even though a normal chest x-ray has little prognostic significance. The chest x-ray may show an air-fluid level with total esophageal obstruction, but usually is not too helpful from a diagnostic standpoint. However, evidence of pneumonia, COPD, or pleural effusions can guide therapy prior to operation.

Bronchoscopy

As a diagnostic tool for esophageal carcinoma, bronchoscopy is best used to discover tracheal invasion by tumor. Therapeutically, bronchoscopy may be helpful preoperatively and postoperatively to provide adequate pulmonary toilet.

Radio-Isotope Scans

Radioactive phosphorus, technetium, and gallium have been used in the diagnosis in staging of esophageal carcinoma.[11] However, they have little to recommend them over current techniques.

Barium Swallow

Barium swallow is the time honored method for diagnosing esophageal carcinoma. It almost certainly will show abnormalities in symptomatic patients. Classically, these patients will show esophageal narrowing with a ragged mucosal pattern. There may be severe stenosis or mass effect with esophageal dilatation proximal to the lesion. However, considerable skill and a high index of suspicion are required to locate subtle changes only when the lesion is confined to mucosa and sub-mucosa. Barium swallow aids the endoscopist by helping guide biopsy of the lesion. Figures 1-3 show the variety of roentgenographic appearance of esophageal carcinoma.

Endoscopy

Esophagoscopy is a necessary and useful tool to diagnose esophageal carcinoma. This is the least invasive method whereby tissue diagnosis and exact location can be determined. In most cases, the tumor is an obvious mass which is friable. However, small sub-mucosal nodules or shaggy based ulcer with raised edges may be the only sign of tumor. Care must be taken with the endoscope and with biopsy as the esophagus may split or perforate when the entire wall is composed of tumor. Brushings of suspicious areas may be helpful when standard biopsy is deemed hazardous. Although blind abrasive cytology has been used

with success in China among high risk populations, it probably is not cost-effective in lower risk populations such as ours.

Computerized Tomography (CT)

Computerized Tomography is the best non-invasive method to access local spread of disease.[12-14] Invasion into mediastinal structures, aorta, or trachea may be seen prior to surgery. However, CT has its limitations. The esophagus may be difficult to distinguish from other soft tissues in the neck due to lack of sufficient para-esophageal fat. In patients who have lost a great deal of weight, mediastinal fat planes may be absent. Despite these limitations, CT has great value in selection and planning of therapy.

Therapy

There are two main objectives in the treatment of esophageal carcinoma. One is to restore swallowing and allow for a more comfortable existence. The other goal is to cure the patient. Achieving both goals is ideal, but seldom possible. Whatever treatment is chosen should be effective and safe. Treatment efficacy varies with tumor stage, physical condition of the patient and expertise of the treating physician. There are few controlled trials comparing different modes of therapy; therefore, it is not surprising to find variation in the results reported for various modes of therapy. We will consider chemotherapy, radiotherapy, and surgery.

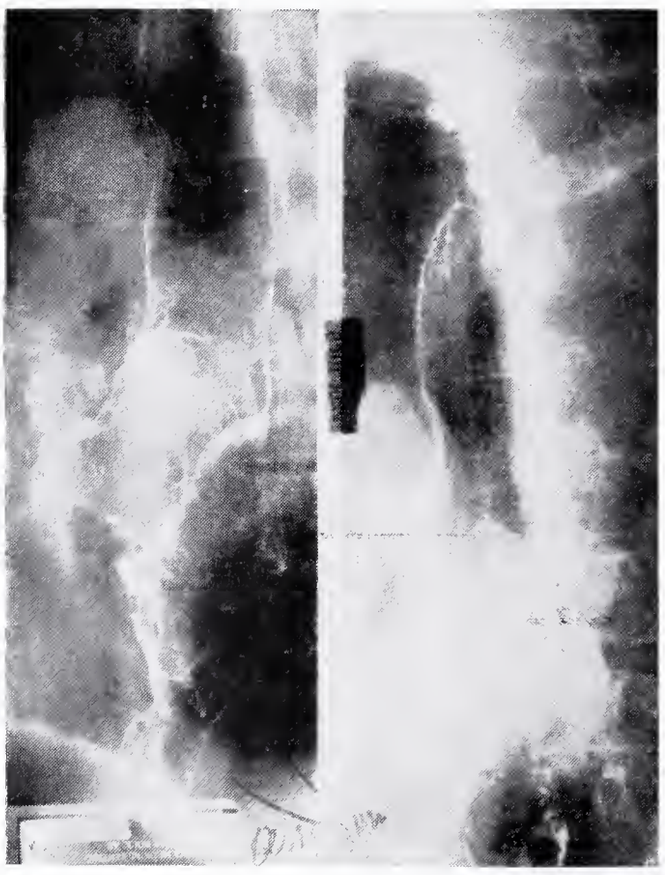


Figure 3.
Fungating mid-esophageal cancer.

Chemotherapy

Chemotherapy differs from radiation and surgery in that it is systemic therapy. Single drug chemotherapy utilizing 5-fluorouracil, Cis-platinum, Bleomycin, Methotrexate or Adriamycin shows response (50% decrease in tumor size) in 5 to 50% of patients.[15-17] Remission is usually of very short duration. Combination chemotherapy shows some promise in the future. 5-FU and Cis-platinum are being used in some current protocols, but difficulty arises in randomizing comparable groups of patients who can tolerate the therapy. Nausea, vomiting and renal toxicity may limit the amount of Cis-platinum a dehydrated malnourished patient can tolerate. Chemotherapy may improve survival for Stage 0-II disease and may shrink tumor enough in Stage III or Stage IV disease to allow for palliative resection.[17] Newer agents such as VP-16 and MGBG are exciting additions to the chemotherapeutic armamentarium. Anecdotal reports of tremendous response may trigger the addition of these agents to existing protocols. However, toxicity may be most severe for the elderly or debilitated and chemotherapy may best be restricted to younger, more fit patients.

Chemo-Radiotherapy

Combined chemo-radiotherapy has been used preoperatively in the patient with unresectable disease. Combination of Methotrexate or 5-FU and Mitomycin-C with 2000 to 3000 rads of x-ray therapy have increased resectability rates in some studies.[17] However, the numbers were small and follow up incomplete. Currently this is best considered anecdotal experience. Bleomycin has been shown to have a synergistic effect with radiation. This may allow patients with advanced disease to receive palliative x-ray therapy by reducing both the dose of x-ray therapy and time required to produce a response.

Radiotherapy

Radiotherapy is a well established method of treatment for esophageal carcinoma. The minimum curative dose is 5000 rads, usually given over 4 to 5 weeks. The maximum dose is 6000 rads, above which side-effects are frequent and severe with no added benefit seen.[18-19] Most esophageal cancers are 5 to 7 centimeters long. In more than one-third of these, microscopic spread within the

esophageal wall will extend beyond the usual 15 centimeter field of irradiation. Because of this local recurrence occurs in 50 to 80% of patients treated with x-ray therapy alone.

No randomized study comparing surgery to radiotherapy in localized esophageal carcinoma has been carried out. Accurate tumor staging is not possible in patients treated by irradiation alone making comparisons difficult. Even in localized esophageal carcinoma, nodal metastasis are present in 30-50% of patients; these metastasis may not be in the irradiated field. Most studies utilizing x-ray therapy alone achieved one year survival of 40-50% and a 5 year survival of 5-10%. The best results are those of Pearson who claims a 20% five year survival in patients treated by x-ray therapy is contraindicated as tumor radioneselected population and does not include those patients unable to complete radical radiotherapy.

The main attraction of the x-ray therapy is its safety. In experienced hands, complications are few. Doses greater than 6000 may cause myocardial or spinal cord damage, radiation pneumonitis or pericarditis. In cases where computerized tomography has shown tumor infiltration of the aorta, atrium or tracheobronchial tree, x-ray therapy is contraindicated as tumor radionecrosis may produce hemorrhage or tracheoesophageal fistula.[20-23] Besides its safety, x-ray therapy is simple compared to operation. However, if the aim of treatment is to restore normal swallowing, x-ray therapy offers relief to less than 50% of patients. Pearson reports that x-ray therapy fails to control growth in 50% of patients and local recurrence is usually evident in 6 to 12 months. Beatty found that more than 50% of patients treated with x-ray therapy alone had post-radiation malignant strictures. Treatment of these strictures is hazardous regardless of the method used (bouginage, rigid esophageal tube, resection). Many of these patients require esophageal by-pass if they are fit for operation.

It has been suggested that curative x-ray therapy be used primarily in patients who refuse or are unfit for operation or for patients with high cervical esophageal carcinoma. Palliative x-ray therapy is, however, quite useful for the pain of advanced, but radio-sensitive esophageal carcinoma. A dose of 4500 rads is still advanced, but radio-sensitive esophageal carcinoma. A dose of 4500 rads is still needed to achieve significant tumor shrinkage. Irradiation for palliation in terms of improvement in the ability to swallow is less reliable. Only 25-50% of patients have improved swallowing which is limited to a few months.[20]

Surgery

Currently, surgery offers the best chance of cure and palliation for esophageal carcinoma. When tumor is localized to the esophageal wall, esophagectomy has a mortality rate of 5-10% and a 60-90% five year survival rate.[9] Unfortunately, most esophageal carcinomas are not so localized at the time of diagnosis and cure with surgery is much less likely. However, if esophagectomy can be performed safely, swallowing and palliation can be gained more quickly than with radiation.

When discussing resection, it must be borne in mind that 50% of patients with esophageal carcinoma are not suitable for esophagectomy when medical therapy is sought. Contraindications to attempted resection are invasion of the airway, recurrent laryngeal nerves, thyroid or lung. Also, patients with severe medical problems such as pulmonary or cardiac disease or those with extensive malignancy and a terminal outlook are not candidates for esophagectomy. However, some patients with unresectable disease may still be suitable for esophageal bypass to allow swallowing. Lymph node metastasis do not always indicate that the tumor is locally advanced. In fact, Giuli and Gignoux found that one-third of patients with supraclavicular nodal metastasis were alive 5 years after resection.[26] Most patients will receive only palliation from esophagectomy; therefore it is important to restore swallowing as soon as possible. Multi-stage operations are rarely indicated for esophageal carcinoma. When the patient's condition requires multiple procedures, consideration should be given to x-ray therapy.

The stomach has the best blood supply of the gastrointestinal tract and is easily mobilized. It is, therefore, the viscus of choice to replace the esophagus. Middle and upper thoracic cancers require a cervical anastomosis for safe resection. The surgical approach to cervical esophageal carcinoma usually requires esophagectomy, hypopharyngectomy, laryngectomy and neck dissection because tumor frequently invades into the membranous trachea and larynx. The high operative mortality and morbidity and frequent inability to achieve adequate margins with cervical esophageal carcinoma have prompted most centers to use

x-ray therapy with or without chemotherapy for most of these tumors.

Adequate excision of squamous cell carcinoma of the distal esophagus requires an anastomosis at or above the aortic arch. Although this can be achieved via a left thoraco-abdominal incision, is probably best reserved for tumor types other than squamous cell carcinoma in the distal esophagus. Squamous cell carcinoma of the esophagus usually requires the approach of Ivor Lewis.[27-29] With this technique, mobilization of the stomach is achieved via laparotomy with the anastomosis created through a separate right thoracotomy. The laparotomy allows mobilization of the stomach without damage to the diaphragm or left phrenic nerve. Mobilization of the pylorus with a Kocher maneuver will allow the stomach to be placed into the chest without tension or impairing the blood supply. Since the vagi are resected with the specimen, a pyloroplasty or pyloromyotomy should be done to allow for gastric emptying. Following the abdominal portion, the supra-aortic anastomosis can readily be done in the right chest after adequate excision of the esophagus.

Middle and upper thoracic esophageal carcinoma requires esophagectomy with a cervical anastomosis.[9,29] Two techniques are generally used, one requiring three incisions: abdominal, right thoracic and cervical. This three stage approach is basically an extension of the previously mentioned Ivor Lewis procedure. The gastric remnant is connected to the cervical esophagus via the cervical incision. Some surgeons prefer this procedure over others and use it for all cases of esophageal carcinoma. The rationale for exclusive use of this three stage procedure is that one can easily achieve adequate resection and anastomotic leaks, will occur into the neck and not the chest.[30]

Recently there has been renewed interest in esophagectomy without thoracotomy ("blind" esophagectomy, transmediastinal esophagectomy, Orringer procedure). Originally described by Denk in 1913 on cadavers, the procedure was resurrected by Kirk in 1974 and championed most enthusiastically by Orringer.[31,32] Only two incisions are required, abdominal and cervical. The esophageal hiatus is widened and the esophagus is bluntly dissected from the mediastinum from above and below. A cervical anastomosis is then performed when the gastric remnant is delivered into the neck. Although this procedure avoids thoracotomy and is apparently useful in those patients who cannot tolerate thoracotomy, it is not without hazard. Severe arrhythmias may result during the esophagectomy since the dissection is immediately posterior to the pericardium and cardiac chambers. Bleeding may be difficult to control; there has been a significant incidence of hemopneumothorax with disruption of the mediastinal pleura. Recurrent laryngeal nerve injury can occur as can injury to the membranous trachea. Difficulty mobilizing the esophagus can occur if there is major fixation of the tumor to adjacent structures. For this reason, computerized tomography has been recommended prior to consideration of transmediastinal esophagectomy.

Orringer has achieved excellent palliation with "blind" esophagectomy and reports an in-hospital mortality of 6%.[31] Morbidity was minimal in his hands. Opponents of the procedure point out that microscopic disease almost always remains within the mediastinum and can result in painful mediastinal metastasis. Some surgeons prefer routine post-operative x-ray therapy following this procedure in an attempt to sterilize the tumor bed.

As previously mentioned, at least half of the patients with esophageal carcinoma have unresectable tumors by the time they are hospitalized. Esophagectomy is not possible in this group of patients; however, palliation can still be achieved. Gastrostomy with or without cervical esophagostomy as a method of palliation is mentioned only to be condemned. Other surgical modalities are of two basic types: placing a tube through the esophageal obstruction and esophageal bypass.

For over 100 years, attempts have been made to restore the esophageal lumen by placing a tube through the obstruction. Currently, the Proctor-Livingstone and Celestin tubes are the most popular tubes for this use. Both tubes are made of rubber, but the Proctor-Livingstone tube is shorter and softer. Occasionally these tubes can be placed endoscopically, however, a laparotomy to anchor the tube into the stomach is usually required. These tubes have an upper bowl which is wider than the tube and acts as a funnel to guide food into the tube. Solid food frequently obstructs the tube however, and most patients will need liquid or blenderized diets to prevent plugging of the tube.[33,34]

Another significant problem with these tubes is the bowl itself. When placed for high thoracic or cervical carcinoma, the bowl may impinge

upon the membranous trachea or cause discomfort with swallowing. This combined with reflux may make swallowing more difficult or lead to severe respiratory compromise. The tubes can become dislodged, cause pressure necrosis of the esophagus with perforation, induce hemorrhage and do nothing for pain. In short, if another alternative is available, it should be tried.

At present, bypass of the esophagus is the best alternative for palliation of unresectable esophageal carcinoma. As previously mentioned, the stomach is easily mobilized, has the best blood supply of the gastrointestinal tract and is the most logical choice for esophageal bypass. Gastric pull-up, usually substernal, appears to be safe and effective with mortality rates of 10% or less usually reported.[35-37] This procedure quickly restores the ability to swallow in most patients. However, not every patient is suitable for substernal gastric pull-up.[38] In patients who have high cervical or lower esophageal cancers, there may not be adequate tumor free tissue for anastomosis. Gastric pull-up is contraindicated in this situation as in patients with gross tumor dissemination or those in a terminal state.

Colon interposition has been used by some to bypass malignancy. However, the blood supply to the colon is not as reliable as that of the stomach and anastomotic leakage is more of a problem. Some surgeons have taken an intermediate approach with use of gastric tubes fashioned from the greater curvature of the stomach[38] (Heimlich, Gavriliu). This method has several disadvantages inherent in it. Technically, it is more difficult and has more sutures lines with increased potential for leakage. The gastric tubes are much less mobile than the stomach in substernal pull-up. In the hands of most surgeons, gastric tubes are not as safe and palliation less reliable than with whole stomach bypass. Jejunum has also been used, but with less success than gastric tubes or colon bypass. Jejunal blood supply may become compromised when the jejunum is pulled into the neck. In experienced hands, mortality for jejunal interposition has been reported as high as 40% and doubtless is higher among the occasional esophageal surgeon.

SUMMARY

Esophageal carcinoma continues to pose a serious challenge in both treatment and diagnosis. An advanced state is usually present when symptoms appear, making early discovery difficult. Diagnosis in an earlier state would be optimal; however, no methods for early detection are yet available. Physicians should have a high degree of suspicion in predisposed patients; vague complaints should not be dismissed. Treatment modalities vary, but surgical therapy continues to be the mainstay of palliation. Various types of esophagectomy and substernal gastric pull-up constitute the major forms of palliative treatment. Currently, adjuvant chemotherapy is the best hope for improved survival in patients with unresectable disease. Earlier diagnosis is, however, the key to curing esophageal carcinoma.

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Primary Malignant Bone Tumors—A Management Approach

Thomas Lange, M.D.,* Kevin Garvin, M.D.,** Jorge Jimenez, M.D.,***
Joanne Seibert, M.D.,*** Laura Hutchins, M.D.,** Aubrey Hough, M.D.,**
and Ducote Haynes, M.D.****

The past ten years have seen an evolution in the care of children and adults with primary malignancies arising in bone. Not only are patients seeking care earlier with respect to the size of the tumor mass but in addition, physicians also have better diagnostic procedures and a more sophisticated treatment armamentarium to offer.

It is estimated that approximately six osteosarcomas per million population can be expected to occur in a given year.[1] Chondrosarcoma, Ewing's sarcoma and other sarcomas are somewhat less common. This implies that any one physician will infrequently have the opportunity to diagnose or treat a malignant bone tumor.

As a rule, bone sarcomas are seen most commonly about the knee where there is rapid growth during the adolescent period. The relationship between the growth spurt and the appearance of these aggressive malignant neoplasms is still unknown. The most common complaint for presentation of a young patient with a malignant bone tumor is pain and swelling at the site of the lesion. Standard x-rays usually reveal a destructive bone lesion which shows evidence of growth into the surrounding soft tissues. Frequently this soft tissue extension is posterior to the knee joint and compels the surgeon to consider amputation as the primary treatment alternative because of the proximity of the tumor to the neurovascular bundle in that region.

Less frequently, primary malignant bone tumors will present in juvenile patients with a pathologic fracture. This may be seen in either Ewing's sarcoma or occasionally in osteosarcoma. Perhaps the most common cause for a pathologic fracture in children is a simple or unicameral bone cyst, an entirely benign lesion which may respond to non-surgical treatment. Adult patients who present with pathologic fractures usually are known to have a primary carcinoma which has metastasized to the bone and thereby weakened it. Multiple myeloma is another diagnostic consideration in the face of a pathologic fracture in adults.

Clinical laboratory studies for the evaluation of bone tumors are usually not diagnostic. An elevated alkaline phosphatase may be seen in osteosarcoma,[2] an elevated sedimentation rate in Ewing's sarcoma, and an abnormal serum protein electrophoresis in patients with multiple myeloma. To confirm the clinical impression, the histopathologic diagnosis is made on the basis of an incisional biopsy.

Since the advent of sophisticated radiographic studies to localize the tumor and effective adjuvant treatments to suppress the growth of a tumor, it is no longer necessary to consider amputation as the only reasonable alternative when faced with a malignant primary bone tumor in the extremity. For this reason, it is important to obtain the necessary "localizing studies" prior to biopsy since the operative hematoma frequently distorts the anatomy and affects the interpretation of studies such as the arteriogram and CAT scan.

Our current work-up for a suspected malignant primary bone tumor such as osteosarcoma would first include AP and lateral plane radiographs of the entire bone containing the lesion and a PA and lateral chest x-ray to look for the appearance of pulmonary metastases which occasionally are present at the time of diagnosis. Studies to further localize the tumor in the extremity include a triple phase bone scan which gives information about the vascularity of the tumor, (Fig. 1), as well as the relative bone production by the tumor. Osteosarcomas for instance are uniformly "hot" as compared to the remainder of the skeleton. The bone scan can be additionally valuable to assess the extent of the tumor within the bone as seen in figure 2. This study prompted a hip disarticulation to eliminate all tumor.

The CAT scan provides a cross-sectional image which aids in visualizing the soft tissue extent of the tumor. This may be further enhanced by intravenous contrast to define the proximity of critical vascular structures such as the femoral or popliteal arteries. It is the relationship of tumor to the major neurovascular structures

*Associate Professor, Department of Orthopedics, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205 and Chief, Orthopedic Surgery, John L. McClellan Memorial Veterans Administration Hospital, Little Rock, Arkansas 72205.
**University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.
***Arkansas Children's Hospital, 804 Wolfe, Little Rock, Arkansas 72201.
****Central Arkansas Radiation Therapy Institute, West Markham and University Avenue, Little Rock, Arkansas 72205.

which ultimately determines whether amputation is necessary.

If the bone scan and CAT scan suggest the malignant tumor is reasonably well localized, consideration may be given to limb salvage. If this is the case, an arteriogram becomes imperative to allow the surgeon to study the vascular anatomy that he will encounter in the region of the tumor. The vascularity of the tumor may also be demonstrated by this technique, however, vascularity per se does not necessarily correlate with malignancy.

Prior to major surgery on the extremity, staging studies to rule out metastases include whole lung CAT scans which are exquisitely sensitive for identification of small 3-4 mm pulmonary metastases. The skeletal phase of the bone scan will survey the entire skeleton for the possibility of other bone lesions. Other staging studies are usually not necessary for primary bone malignancies since the major site of metastases from sarcomas is the lung.

At the completion of this preoperative work-up, the biopsy is planned. The incision for the open biopsy is placed longitudinally and as distal as possible over the lesion where the scar can ultimately be incorporated into the planned resection or amputation. Although definitive surgery is not usually done on the basis of a frozen section diagnosis, tissue is always submitted for frozen section evaluation to allow the pathologist to determine that adequate tissue has been obtained and that the surgeon has not biopsied either reactive or necrotic tissue.

The treatment of primary malignant bone tumors depends on histogenesis as well as local extent of the tumor. Those sarcomas where the malignant cells produce an identifiable matrix such as bone, cartilage or fibrous tissue are surgically treated since this group of tumors tends to be radiation resistant.

Ewing's sarcoma which occurs in the same age group as osteosarcoma, namely the second decade of life, is a malignant neoplasm composed of undifferentiated small round cells felt to be primitive marrow stem cells. Although there has been some debate in the literature regarding the optimal treatment, this tumor tends to be exquisitely sensitive to radiation therapy at the primary site and improved long term survival has been seen with the addition of aggressive chemotherapy. Radiation directed to the entire bone involved by the tumor is carried to 5,000 rads with a further boost of 1,000 or 1,500 additional rads to the radiographic extent of the tumor. Other round

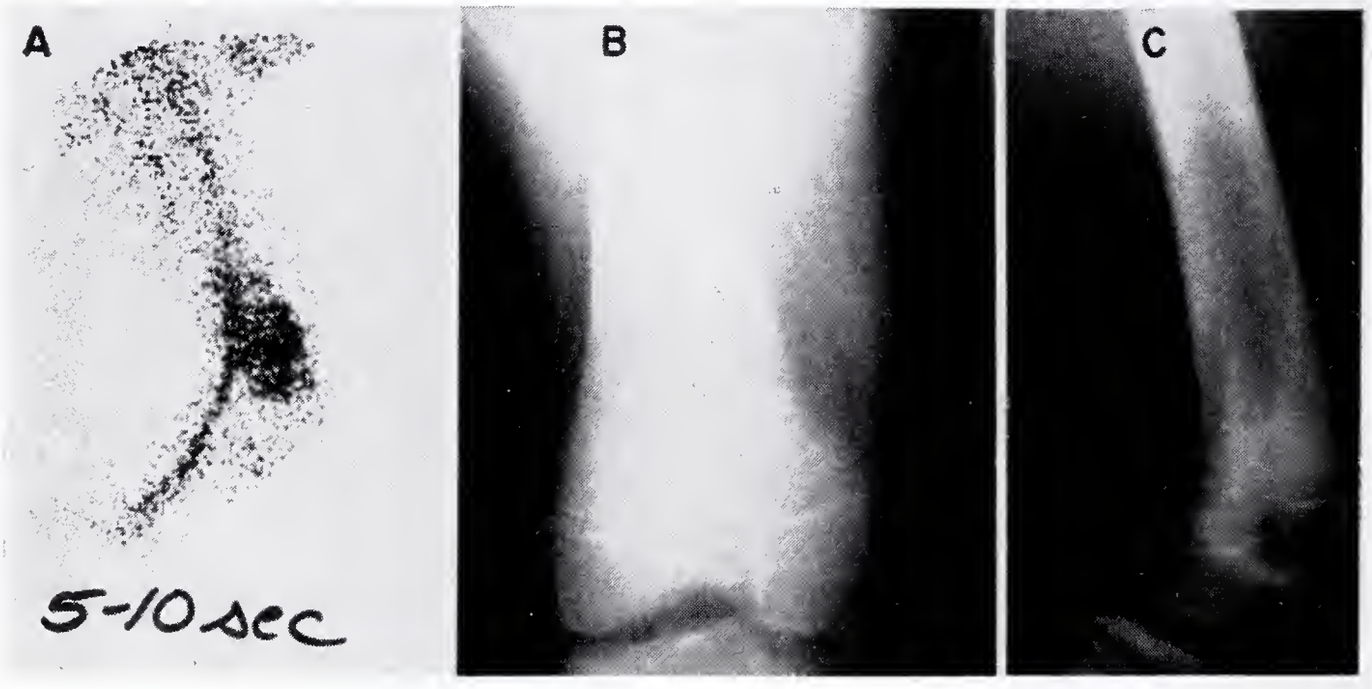


Figure 1-A.

Tc 99 m MDP bone scan flow study of the knee region of a 10-year-old girl with Ewing's sarcoma made in the lateral view. The scan was made between 5 and 10 seconds following injection of the radionuclide. The tumor is seen to have high uptake of the radionuclide indicating marked vascularity. Additional tracer is seen in the femoral artery as it passes posterior to the knee joint.

Figure 1-B.

AP x-ray of the distal femur with the Ewing's sarcoma involving the medial cortex of the bone.

Figure 1-C.

Lateral view revealing erosion of the bone centrally.

cell malignant tumors of bone such as reticulum cell sarcoma and multiple myeloma are also sensitive to radiation either for primary control or palliation.

In those sarcomas requiring surgery we have attempted limb salvage using a program of preoperative chemotherapy and radiation similar to that reported by Eilber at the U.C.L.A. Medical Center.[3] Adriamycin (Doxorubicin) is administered systemically by a 72 hour infusion followed by five days of fractionated high dose irradiation to the primary tumor site. Two to four weeks later surgery is performed. The report of a recent case follows.

CASE REPORT

The patient is a 34-year-old black female referred to us with a chief complaint of a painful mass over the medial aspect of her distal right thigh of four months duration. She denied fever, chills, night sweats or weight loss. She also denied any injury to this extremity. Past history was non-contributory. Examination of her extremity revealed tenderness over a firm, fixed soft tissue mass measuring 10 cm x 15 cm over the anterior medial aspect of her distal thigh. She had full range of motion of her hip and knee with intact neurovascular function. Radiographs of the femur revealed a poorly defined expansile osteolytic lesion of the distal diaphysis. (Fig. 3A) A CAT scan of the chest was negative for metastases. A CAT scan of the lesion revealed minimal soft tissue extension anteromedially.

After this preoperative work-up, an open biopsy of the soft tissue mass was done attempting to establish the diagnosis without entering the bone. This soft tissue was reactive and non-diagnostic on frozen section, therefore, a window was made in the bone where tissue revealed a telangiectatic type of osteosarcoma.

Following wound healing the patient received a 72 hour femoral artery infusion of 90 mgm of Adriamycin over three days. Radiation treatment of 350 rads/day x 5 doses, totaling 1,750 rads was begun the following day. Two weeks later, the patient underwent en block resection of the tumor saving the knee joint. A custom stainless steel

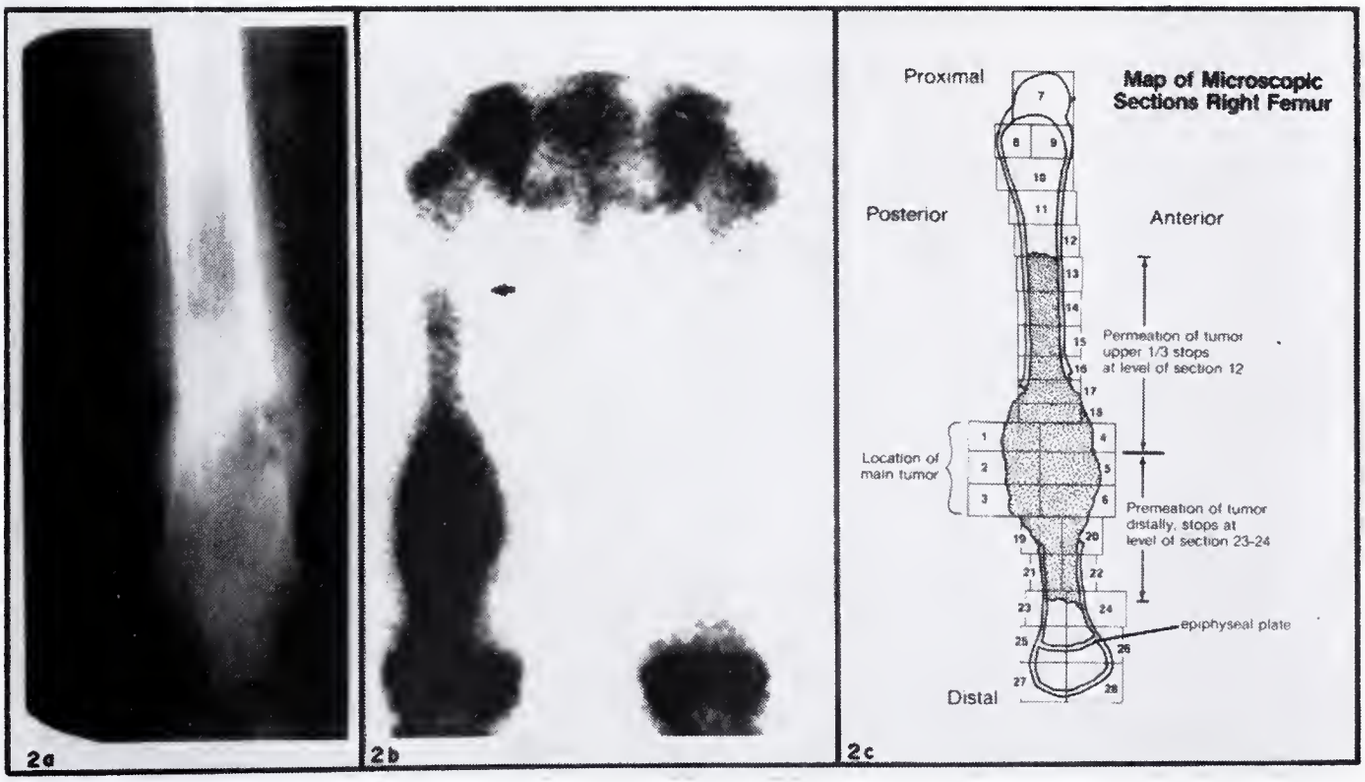


Figure 2-A.
AP x-ray of the femur of a 5-year-old child with biopsy proven osteosarcoma. The tumor is seen to extend well beyond the confines of the bone as evidenced by the mineral density in the soft tissues.

Figure 2-B.
Corresponding bone scan of the entire involved femur. This is the delayed or skeletal image of the bone scan and indicates increased uptake in regions of accelerated bone formation. The primary tumor mass is the intensely dark bulbus zone in the distal femur. Proximal to the main tumor mass is reduced but significant bone uptake in the medullary cavity.

Figure 2-C.
Pathologist's map of the cut section of the entire femur. This indicates microscopic tumor extension correlates with the increased bone scan activity in the medullary cavity seen in figure 2-B.

prosthesis was secured in the defect and further stabilized by an AO blade plate. (Fig. 3B) The entire procedure was done through an anteromedial approach incorporating the medial biopsy scar. Post-operatively the patient's wound healed and she was started on long term chemotherapy. The original biopsy specimen and post irradiation specimen are seen in Figures 4A & B.

DISCUSSION

Although limb salvage is appealing both to the patient and treating physician, it creates additional potential problems for both. Although the exact figure is not known, there is a slightly higher risk of local recurrence when limb salvage is performed instead of proximal amputation. This risk needs to be discussed with the patient when limb salvage is contemplated. Preoperative adjunctive radiation and chemotherapy appears to reduce the risk of local recurrence.[3] The mechanism for this may be the degree of tumor necrosis produced prior to surgery.

The large bone and soft tissue defect necessitated by an adequate tumor margin also creates unique and challenging reconstructive problems for the orthopedic surgeon. Postoperative chemotherapy suppresses bone and soft tissue healing thereby making reconstruction with either autograft or allograft less certain of success. The large wounds necessitated by limb salvage also have a high potential for breakdown and necrosis com-

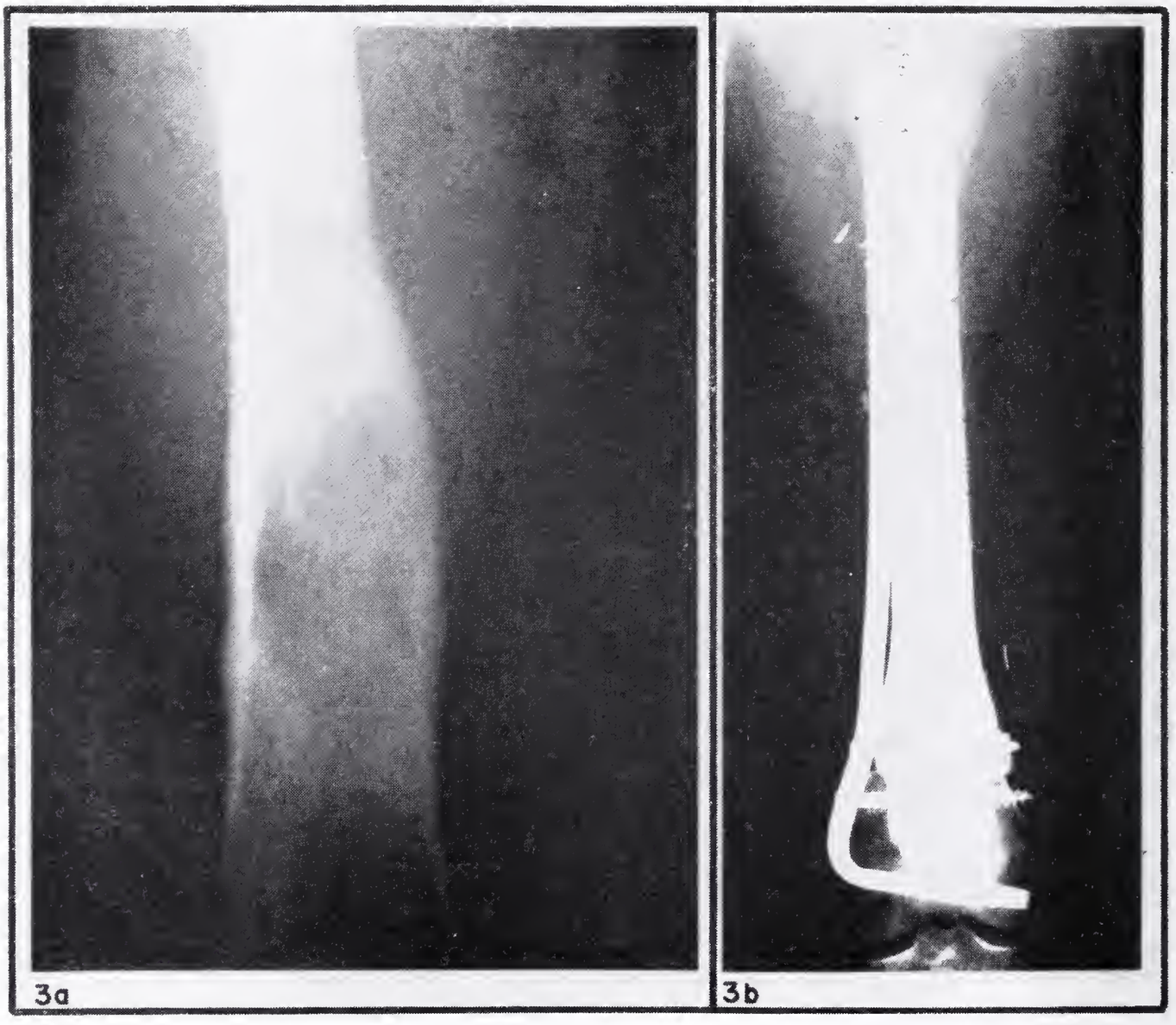


Figure 3-A.

AP x-ray of the distal femur osteosarcoma of a 34-year-old black female. Bone distruction is apparent by virture of the relative radiolucency in the tumor area. Slight enlargement of the normal bone contour is noted as well as mild thickening of the subperiosteal bone.

Figure 3-B.

AP view of the reconstructed right femur. The knee joint was preserved by utilizing an intercalary custom prosthesis between the normal femur above and the metaphyseal distal femur below. The construct was further stabilized by a long blade plate commonly used for orthopedic trauma work.

promising either the limb salvage procedure itself or the subsequent intended postoperative chemotherapy schedule. If a functional and sensate extremity can be maintained, however, the quality of life and the patient's self image are improved.

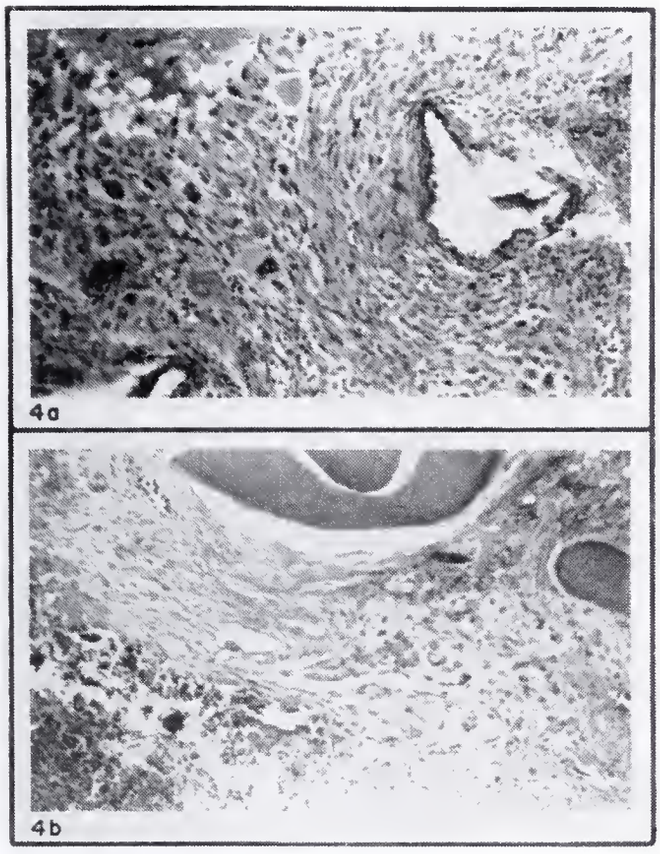


Figure 4-A.

H and E photomicrograph of the biopsy specimen of the osteosarcoma seen in figure 3, magnification x 400. The tumor is highly cellular with bizarre giant nuclear forms. Osteoid was not apparent in this particular section.

Figure 4-B.

H and E photomicrograph x 400 magnification of a portion of the resected tumor. The trabecular bone is devoid of osteocytes and the cellular medullary portion of the bone appears almost entirely necrotic with a few ghosts of cells and pyknotic nuclei remaining. This tumor necrosis was presumed to be related to the preoperative adjuvant chemotherapy and radiation therapy.

The role of adjuvant chemotherapy in the postoperative period plays a significant role in reducing the occurrence of pulmonary metastases.[4] The mainline drugs include Adriamycin, Methotrexate and recently Cis-platinum. Aggressive and long term therapy (12-18 months) appears necessary in both juvenile and adult patients with high grade primary sarcomas if a reduction in mortality from metastases is to be seen.

Recently, Mankin, et al., argued that both the biopsy and definitive surgery should be done at centers where the surgery, pathology interpretation, radiation therapy and chemotherapy can be coordinated from start to finish.[5] With an aggressive, cooperative multispeciality approach to patients with primary bone sarcomas, limb salvage with reasonable functional capacity and optimal patient survival can be anticipated.

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Corporate Practice of Medicine Through Licensed Employees

Michael W. Mitchell*

HISTORY

Historically, it has been widely accepted that a commercial enterprise is prohibited from selling the services of employed licensed professionals.[1] The issue has been raised in a variety of cases, including challenges by state attorneys general,[2] state licensure boards,[3] state insurance commissioners,[4] medical malpractice cases,[5] disputes involving noncompetition agreements,[6] and at least one malicious prosecution case.[7] The rationale in the cases condemning the corporate practice of medicine has been usually based upon strict statutory construction of licensure laws construing them only to intend the licensure of human beings with personal characteristics such as honesty, loyalty, good moral character, educational qualifications and the like. Furthermore, public policy plays an important role in the rationale in these decisions reasoning that a licensed professional employee will naturally owe allegiance to and be subject to control by his employer.[8] Where the employer is profit motivated, the professional is faced with even a greater ethical dilemma in attempting undivided loyalty to the patient.[9] Furthermore, the conduct of the lay employer is beyond the reach of professional licensure boards.

Several jurisdictions have permitted the corporate practice of medicine by statute or judicial decision by narrowly defining the practice of medicine confining it to the actual performance of the profession as opposed to the management and business aspects of the practice.[10] The same principle has persuaded some courts in cases involving prepaid health plans[11] and in cases involving hospitals.[12]

Corporate Practice in Arkansas Today. Most prohibitions mentioned in the first part of this paper are now permitted by statute. The corporate practice of medicine is acceptable in compliance with statute usually requiring all "...officers, directors and shareholders..." to be licensed physicians. *See Ark. Stat. Ann.* §64-1701, *et seq.* (1961). The policy rationale against the corporate practice of medicine is not offended as opposed to solo or partnership form of business. *See* 26 Calif. L. Rev. 91 at 97. In Arkansas, nonprofit hospital service corporations and medical service corporations are statutorily permitted to operate by contracting with insureds and health care providers. *Ark. Stat. Ann.* §66-4902 (1963). The language of the statute expressly resolves the corporate practice of medicine question while also expressly preserving the traditional physician-patient relationship as well as the physician standards of practice. The statute provides in part as follows, to-wit:

> Nothing in this chapter shall be deemed to alter the relationship of physician and patient... Nothing in this chapter shall be deemed to abridge the right of any physician or hospital to decline patients in accordance with the standards and practices of such physician or hospital, and *no such corporation shall be deemed to be engaged in the corporate practice of medicine. See Ark. Stat. Ann.* §66-4914 (1959).

Although most physicians in Arkansas relate to hospitals not as employees but as independent contractors with privileges, it is common practice for hospitals to employ emergency room physicians and nonprimary care physicians. However, there is no statutory language permitting the employment of physicians by hospitals visavis the corporate practice of medicine.[13] The employment of physicians by hospitals is ethically recognized by the American Medical Association in the *Current Opinion of the Judicial Council of the American Medical Association* Section 4.06 (1982) which states as follows:

> *Physician-Hospital Contractual Relations.* There are various financial or contractual arrangements that physicians and hospitals may enter into and find mutually satisfactory. A physician may, for example, be a hospital employee, a hospital-associated medical specialist, or an independent practitioner with staff privileges. The form of the contractual or financial arrangement between physicians and hospitals depends on the facts and circumstances of each situation. A physician may be employed by a hospital for a fixed annual amount, for a certain amount per hour, or pursuant to other similar arrangements that are related to the profes-

*Cearley, Mitchell and Roachell, 1014 West Third Street, P. O. Box 1510, Little Rock, Arkansas 72203-1510.

sional services, skill, education, expertise, or time involved.

With the advent of alternative delivery systems, usually authorized by state statutes, the corporate practice of medicine is implicitly approved in the delivery of medical services by these entities. For example, *see,* Health Maintenance Organization Act of 1975, *Ark. Stat. Ann.* §66-5201, *et seq.,* which expressly authorizes "the furnishing of health care services through providers which are under contract. . . " §66-5205(c).

CONCLUSION

In most states it still appears illegal for a business entity to sell for profit the services of a licensed professional where the activity is not authorized by statute. With the arrival of alternate delivery systems, more and more occasions will arise which will tempt litigation unless these questions are resolved by legislation. The policy reasons for the rule against the commercial exploitation of a profession by nonlicensed entities are still valid. However, economic pressures have forced the relaxation of the rule to allow for different modes of practice in the hopes of less expensive medical care. Today, there seems to be a departure from the traditional view that the physician must owe sole allegiance to the patient in favor of some consideration to the cost of care as it relates to expense to the patient and possibly even profit to an employer. Because of this conflict, the patient may suffer some decline in the quality of care, may lose the right to choose a physician and may forfeit other freedoms enjoyed in the past.

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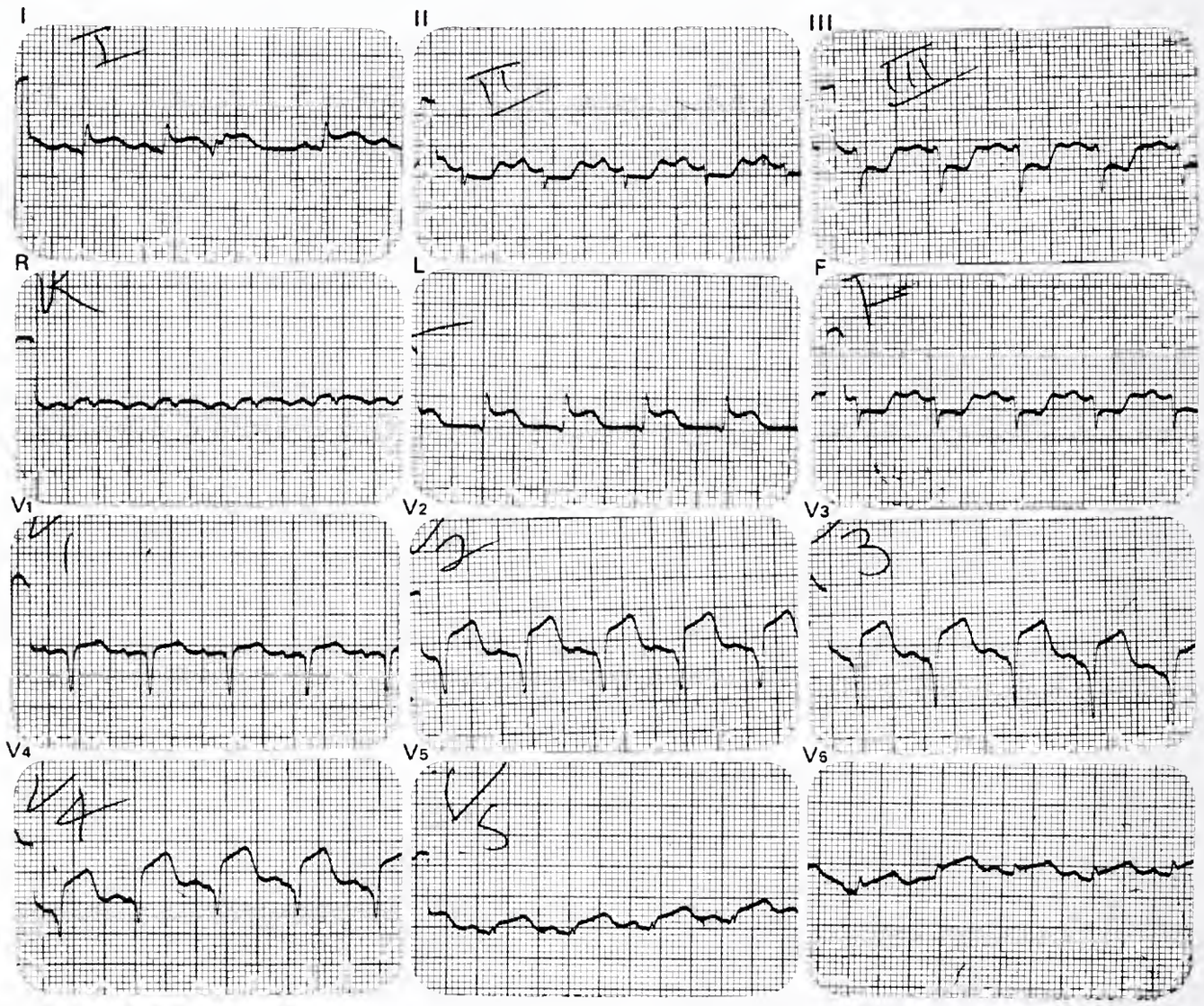
1. *See* 37 Mich. L. Rev. 961; 103 ALR 1240.
2. *People* v. *United Medical Service,* 200 N.E. 157 (Ill. 1936); *State* v. *Baker,* 235 N.W. 313 (Ia. 1931); *People* v. *Painless Parker Dentist,* 275 P. 928 (Colo. 1929); *Lewis* v. *Woodbury Dental Parlors Co.,* 175 N.Y.S. 269 (N.Y. 1919).
3. *Painless Parker* v. *Dental Examiners,* 14 P. 2d 67 (Calif. 1931); *State Dental Examiners* v. *Savelle,* 8 P. 2d 693 (Colo. 1932).
4. *Pacific Employers Insurance Co.* v. *Carpenter,* 52 P. 2d 992 (Calif. 1935). For opposite result, *see Sager* v. *Lewin,* 106 S.W. 581 (Mo. 1907).
5. *Iterman* v. *Baker,* 15 N.E. 2d 365 (Ind. 1938); *Youngstown Park & F Street Railway Co.* v. *Kidler,* 95 N.E. 509 (Ohio 1911); *Hannon* v. *Siegel-Cooper Co.,* 60 N.E. 597 (N.Y. 1901).
6. *United Calendar Manufacturing Corp.* v. *Huang,* 463 N.Y.S. 2d 497 (N.Y. 1983); *Dr. Allison, Dentist* v. *Allison,* 196 N.E. 799 (Ill. 1935).
7. *Godfrey* v. *Medical Society,* 164 N.Y.S. 864 (N.Y. 1917).
8. *Wortlton* v. *Davis,* 249 P. 2d 810 (Idaho 1952).
9. *See Group Health Assn.* v. *Moor,* 24 F. Supp. 445 (D.C.D.C. 1938) and *People* v. *Pacific Health Corp.,* 82 P. 2d 429 (Calif. 1938). It has been suggested that the policy objection against the corporate practice of medicine is removed in the case of a nonprofit entity.
10. *State* v. *Williams,* 5 N.E. 2d 961 (Ind. 1937); *Renwick* v. *Phillips,* 268 P. 368 (Calif. 1928); *Bloom* v. *State Board of Dental Examiners,* 188 P. 960 (Ore. 1920); *Smith* v. *Dental Examiners,* 72 P. 110 (Wash. 1903).
11. *King* v. *Phoenix Ins. Co.,* 92 S.W. 892 (Mo. 1906); *State Electro-Medical Institute* v. *Patner,* 103 N.W. 1079 (Neb. 1905).
12. *Terry* v. *Johnston,* 208 N.W. 615 (Neb. 1926) where it was held that the owners of hospitals may legally employ physicians to perform professional services; *Sager* v. *Lewis,* 106 S.W. 581 (Mo. 1907).
13. *See Division of Hospitals and Nursing Homes Act, Ark. Stat. Ann.* §82-327, *et seq.* (1961).

ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 128)

HISTORY: T. B. is a 57-year-old male who presented to the emergency section of his local hospital because of severe chest pain of four hours duration. He had noted similar but less severe pain for several weeks which was related to exertion but which ceased five minutes after rest was initiated. On presentation, he was noted to be hypotensive and had both rales and an S_3 gallop. What do you think of his trace and how do you feel he should be managed?



John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

Silk Purses and Sows' Ears

Charles C. Schock, M.D.*

The body contains numerous structures with the name bursa (L., purse) which are designed to reduce friction between skin, tendon, ligament or muscle as it moves over bony prominences during normal functioning. Inflammation in one of these bursae can cause marked symptomatology, sometimes inducing the patient to view these elegant purse-like structures more as sows' ears than as silk purses. The thickening, fibrosis and attendant impairment of function of the chronically inflamed bursa can demonstrate the old adage that it is difficult to make a silk purse out of a sow's ear.

The most common form of bursitis is most likely the response of the adjacent tissues to repeated overstress and trauma. This probably represents a healing response, and the associated pain and disability is probably a functional attempt on the part of the body to guard the repair process during the healing phase. Local swelling, erythema, and other systemic signs are minimal in this phase, and the condition will probably respond to a short course of rest, symptomatic measures, and a temporary alteration of lifestyle. Examples of this approach would include use of a sling for extensor epicondylitis at the elbow, a cane for trochanteric bursitis, and the alteration of footwear in association with tendo-achilles bursitis. In conjunction with the above, physiotherapeutic measures and the mild analgesics are helpful. Activities may be gradually resumed as tolerated. Permanent alteration of lifestyle to eliminate prolonged kneeling (for pre-patellar bursitis) or prolonged sitting on hard surfaces (for ischial bursitis—"weavers bottom") may be indicated.

In persistent cases which do not respond to these simpler modes of treatment, one may need to add injection of the symptomatic area with local anesthetic and corticosteroid. This serves the dual role of being able to diagnose with greater certainty the anatomic site of the patient's symptomatology, and with infiltration of a corticosteroid the inflammatory process may be more quickly brought under control. The use of oral nonsteroidal anti-inflammatory agents may also enhance the therapeutic response and hasten the resolution of the process. It is not uncommon in orthopedic practice to inject the subacromial bursa, the trochanteric bursa, and pes anserinus bursa, and more rarely any of the anatomic bursae may be candidates for this approach. It should be noted, however, that the corticosteroid effect not only includes decrease in inflammation, but also a gradual reduction in the amount of collagenous tissue. Repeated injections should be used with caution in areas where the tendinous structures are expected to continue to bear large loads. This is particularly true in the achilles tendon region.

When the inflammatory process has been prolonged or repetitive, calcification of the tissues adjacent to a bursa may result, and if the calcific focus ruptures into the bursa, an acute and excruciatingly painful bursitis will be the result. This will respond to aspiration, lavage and, as above, injection of local anesthetic and corticosteroids. Occasionally, calcification may be seen on x-ray, particularly in the subacromial bursa, and in the bursa beneath the tibial collateral ligament.

If there is any question of this process not representing acute calcific bursitis, but rather an infection, corticosteroid injection should not be carried out but rather the appropriate organism

*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

cultured and as usual anti-infection measures undertaken including antibiotics and occasionally appropriate incision and drainage. It is sometimes difficult to distinguish between an acute nonpyogenic bursitis and a bursal infection and hence caution should be exercised in the treating of these more acute conditions. Since a fever and leukocytosis as well as local swelling and erythema can accompany nonpyogenic bursitis, differentiation can sometimes be difficult. A gram stain of the aspirated fluid can frequently be helpful as an initial indication of whether a process is pyogenic or nonpyogenic. In chronic bursitis, excision of the bursa is sometimes indicated.

Older texts speak of the commonness of tuberculous infections in bursae, particularly the trochanteric bursa. This should be kept in the back of one's mind, but is not very commonly seen today.

With the appropriate identification of the stage of the bursitis, one may then institute appropriate treatment in the earlier stages, with an eye toward lessening the possibility of chronic bursitis or acute calcific rupture into the bursa. With identification of the body's normal response to "wear and tear" over a bursa in its initial phases, one may initiate rest and temporary or permanent alteration of activities with hopefully a natural healing response to the series of insults and a gradual resumption of normal function and return to an activity level which the patient can tolerate. With judicious counseling it may well be possible to avoid the more extreme measures such as injection or surgery, and to keep the patient functioning at an optimal and acceptable level.

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Bicycle Accidents

Stuart Fitzhugh, M.D., M.P.H., FAAP*

In approaching accident prevention in children it is very important to tie strategies into consideration of age and its effect on behavior.

For example, inhalation of foreign objects is primarily a problem in the first 3 years of life. Likewise accidental ingestion of poisons is also a problem in the first 4 years of life. Scalds are primarily a problem in the first 5-6 years while serious burns other than scald may occur at any age. If a mother asks you at what age is her child mature enough to walk 4 blocks to school, how would you answer?

The concept of risks of accidents being related to development is important in planning anticipatory guidance for parents. Since there are so many types of accidents that endanger the life and health of children, I am going to discuss only one of these today. Bicycle accidents are a very serious problem of children and since the fitness fad has swept the country, adults are also involved. Over one thousand deaths occurred last year due to bike accidents.

The approach to bicycle safety varies to some extent with the age of the child. In the beginner of about 5-6 years, falls due to incoordination are a problem. Later on the child gains confidence and becomes tired of his own front yard. Forays into the streets may occur. Since inattention is a problem in this age, collision with automobiles may result. The child should be taught techniques and traffic rules for bicycling. Our Bureau of Health Education Division is working on developing some packets that can be used for this purpose.

In the older child and adult emphasis again changes. Over 40% of bicycle death occurs at night. Several factors are responsible for this. First, is the problem of not being seen by the motorist. Frequently, this is due to insufficient lights or reflectors on the bike or on the rider's clothes.

Why would a child be riding a bike at night? These are two big reasons for this. First, is staying out after dark playing with friends. This can be best solved by parental discipline. The second reason is not so easy.

Newspaper carriers usually are required to finish their route by 6:30 a.m. For about 6 months out of a year this requires the newspaper boy to be out before daylight. Since the most popular bikes for young boys is the twenty inch large tire model and this is used for doing "wheelies" and on mudtrails, etc. the bike is usually stripped of light, reflectors, etc. It is almost impossible to find lights that are easily detachable and reattachable. The next best solution is a light that straps on the head and/or flashing red lights that can be attached to clothing. Seeing that these measures are used may require considerable parental effort.

Riding on narrow streets without adequate shoulders is a very real hazard. This is compounded by the extended rearview mirrors used on trucks or vans that pull recreational vehicle or trailers. These may jut out a foot or more. Two deaths occurred last year in Dade County, Florida, from broken necks because of these mirrors.

In conclusion, the purchase of a bicycle for a child imposes a heavy responsibility on the parent or parents. It is important that the child be trained in the proper manner so that there will be minimal chance of tragic accidents occurring. Professionals in public health or private practice who work with children and their families should include bike safety in their counseling and health education routine.

*Deputy Director, Arkansas Department of Health, 4815 W. Markham Street, Little Rock, Arkansas 72205-3867.



EDITORIAL

Colitis and Arachidonic Acid

Alfred Kahn, Jr., M.D.

Arachidonic acid is the precursor of prostaglandins. Prostaglandins play an important regulatory role in normal body functions, as is well known. Disordered prostaglandin metabolism has been noted in disease states. The prostaglandins and their derivatives, thromboxanes and prostacyclin, have received a lot of medical publicity with regard to intravascular thromboses.

Mark Donowitz has reviewed the relationship between "Arachidonic Acid Metabolites and Their Role in Inflammatory Bowel Disease" (Gastroenterology, Volume 88, Page 580, February, 1985). In his introduction, he points out that there are some new facts about prostaglandins; firstly, arachidonic acid can be metabolized by two separate pathways—the cyclooxygenase pathway and the lipoxygenase pathway. He states that inflammation in the bowel mucosa affects prostaglandin metabolism in various ways, some of which are indirect. The studies indicate that the lipoxygenase pathway end products are found in enhanced amounts in patients with severe colitis. Donowitz also remarks that arachidonic acid end products can change electrolyte transport in the bowel—this may be one of the causes of diarrhoea. In further discussing the chemical changes which occur in arachidonic acid metabolism, the author states that the cyclooxygenase pathway leads to end products including thromboxanes, prostacyclin and certain prostaglandins, whereas the lipoxygenase pathway leads to leukotrienes and some less well-known chemicals called hydroperoxyeicosatetranoic acids and hydroeicosatetranoic acids. The importance of the two pathways is that Donowitz was not able to gather much information relating colitis to the lipoxygenase pathway at this time, but he was able to obtain a good deal of information pertaining to the cyclooxygenase pathway. Our knowledge of prostaglandins and the bowel is largely derived by measuring prostaglandins in the bowel contents and in the examination of the mucosa of the bowel obtained at operation or biopsy.

Donowitz has found that in inflammatory bowel disease as ulcerative colitis or Crohn's disease, there is a marked increase in the end products of arachidonic acid which is metabolized through the cyclooxygenase pathway; for example, it is reported that there is a 100-percent increase in prostaglandin E_2 and thromboxane, and a 50-percent increase in prostacyclin; these figures apply to active colitis, and it has been shown that when colitis become inactive these end products fall to approximately normal levels. There have been some studies which show by rectal biopsy that the lipoxygenase end products are also increased in colitis. Donowitz infers from this that the disturbance in arachidonic acid metabolism may occur, so-to-speak, at the level of free arachidonic acid or some earlier derivative of arachidonic acid. The author also speculates that the increase in arachidonic acid end products, which implies an enhanced activity in the arachidonic acid pathways, may be the result of stimulation by phospholipase type chemicals in the intestinal mucosa. The cell type from which the arachidonic acid derives is uncertain, but it is reported in this article that most likely prostaglandins are made in the subepithelial portion of the small intestine and the degradation of the prostaglandins occurs in the epithelial layer; these facts seem to apply to the small intestine; it is not entirely clear about the colon.

Donowitz states that arachidonic acid metabolism can be modulated. According to Donowitz, neutrophils can cause an enhanced amount of the end products of the lipoxygenase pathway. Bradykinin, which affects free arachidonic acid production, is thought to be increased in inflammatory bowel disease. This leads to the produc-

tion of stable prostaglandins as PGE_2. This, in turn, increases electrolyte transport in the bowel. Bradykinin is also thought to affect the lipoxygenase pathway, but this is unproved.

Donowitz's research indicates that all arachidonic acid abnormalities bear a strong relationship to diarrhoea in colitis although most of the work has been done in vitro rather than in vivo; it is postulated that diarrhoea is the result of a number of factors, several of which are mentioned, including "increased intestinal active chloride secretion, decreased active sodium and chloride absorption, and alterations in intestinal motility". Both pathways of arachidonic acid metabolism have been reported to cause diarrhoea, but this is unproved in humans. An area which is not well understood is how the arachidonic acid end products alter the intracellular metabolism to produce diarrhoea; it is cited that PGE_2 activates the adenylate cyclase system but thromboxane is said to decrease adenylate cyclase activity; other effects have been noted.

Donowitz reports that rectal mucosa has been studied for prostaglandin activity in cases of ulcerative colitis. It was found that adenylate cyclase activity was increased and it was believed to be due to PGE_2. He brings up an interesting point—namely, that adenylate cyclase is stimulated by the action of certain receptors, and one wonders if these same receptors are the ones which are activated to produce changes in electrolyte transport in the cells.

Donowitz states that the intracellular mediator of the end products of lipoxygenase pathway are really unknown. It is speculated that calcium may play some role but conclusive proof of the intracellular mechanism of action of products of this pathway are unknown.

An interesting fact brought out in this article is that although the idiopathic inflammatory bowel disease increases adenylate cyclase activity, infections disease such as Salmonella does not seem to do this. This suggests that there is some important difference in the way the two categories of disease act on the bowel mucosa. Another interesting point of speculation brought up by the author is that the end product of arachidonic acid metabolism might produce some of the other symptoms in chronic bowel disease. He suggests pain, fever, weight loss and elevated white cell count might be an end result of these products; in this context, leuketrienes are an end product of lipoxygenase pathway and they are known to produce chemotaxis and some of the changes which are seen in inflammatory reactions.

From a medical point of view, the author states that arachidonic acid metabolism might be altered to induce beneficial changes in patients with inflammatory bowel disease. The biochemical steps in accomplishing this have not been elucidated or really proved. In the article, Donowitz states that glucosteroids prevent bound arachidonic acid from becoming free arachidonic acid, and this, in turn, blocks both pathways of arachidonic acid metabolism. Sulfasalazines are also inhibitors of both pathways; 5-aminosalicylic acid acts in the same manner. It is interesting that sulfasalazine and 5-aminosalicylic acid can induce as good a therapeutic response when given rectally as when given by mouth. Both of the drugs noted above are said to inhibit the lipoxygenase pathway of arachidonic acid metabolism. Donowitz states that drugs which tend to inhibit the cyclooxygenase pathway have not been particularly efficacious. He cites that indomethacin was tried—and it is said to have been an effective cyclooxygenase inhibitor and produced no bowel disease.

Donowitz suggests perhaps the ideal way to treat inflammatory bowel disease is to inhibit arachidonic acid metabolism before free arachidonic acid goes into either the cyclooxygenase pathway or the lipoxygenase pathway. One of the drugs which is proposed here is the use of quinacrine or a related drug which interferes with the formation of free arachidonic acid; the use of this drug as an enema has been proposed. Vitamin E was also proposed in this article as a possible therapeutic agent for chronic inflammatory bowel disease.

Arachidonic acid and its metabolites are found in many places in the body. The connection between arachidonic acid and inflammatory bowel disease is a most interesting relationship and may prove fruitful in the long run in finding new drugs to treat colitis and enteritis.



"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Journal of the Arkansas Medical Society
Vol. 5 No. 1 Oct., 1894 p. 28
(Proceedings Nineteenth Annual Session)
Section on Practice of Medicine
Wednesday Afternoon

The Section on the Practice of Medicine convened at 2 o'clock and was called to order by the chairman, Dr. B. Hatchett, of Fort Smith.

The secretary, Dr. J. C. Amis, being absent, Dr. T. J. Wright was chosen secretary *pro tem.*

The chairman then proceeded to deliver his address on the "Practice of Medicine", which on being concluded was referred for publication.

Dr. Edwin Bentley, of Little Rock, read a paper entitled "Deductions from the Treatment of Affections of the Lungs and Pleura at the Clinic of the Arkansas Industrial University, Medical Department".

The discussion was opened by Dr. J. T. Jelks and continued by Drs. Gibson, Guthrie, and closed by Dr. Bentley. The paper was referred for publication.

Dr. Gibson read a paper on the subject of "Suggestions for the More Exact Prescribing of Diet".

Dr. Bentley opened the discussion and was followed by Drs. D. A. Gray, Hynes, M. G. Thompson, Hudspeth, Baird and Goree. Dr. Gibson closed the discussion and the paper was referred for publication.

Dr. D. A. Gray read a "Report of Two Cases of Parenchymous Metamorphosis of the Kidneys," which was referred to publication committee.

Dr. J. R. Lynn not being present, his paper on "A Case of Malarial Haematuria", was postponed.

The Section adjourned to Friday afternoon.

T. J. Wright, M.D.,
Secretary pro tem.

ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG shaws the potient to have sinus tachycardia with rare ectapic beats, mast likely ventricular in arigin. Substantial ST elevation is present in Leads I, AVL, and V_2-V_5. ST depressian is noted in II, III, ond AVF. Significant Q waves are seen in V_2-V_4. All af these changes are campatible with acute anteriar infarctian. Essentially all physicions wauld ogree with standard caronary care with strong consideratian also being given both ta hemadynamic manitaring and intervention and to thrombalytic therapy.

MEDICINE IN THE NEWS



THE MONTH IN WASHINGTON

Ban On Cigarette Ads

A coalition of health organizations this month has asked the Federal Trade Commission (FTC) to take action against a recent series of advertisements which contend that the link between smoking and disease is opinion, not scientific fact.

At a news conference, in Washington, D. C., spokesmen for the American Heart Association, the American Lung Association and the American Cancer Association called the R. J. Reynolds Tobacco Co. advertisements "false and deceptive".

"The R. J. Reynolds ad is a blatant attempt to mislead the public on the relationship between cigarette smoking and cardiovascular disease," said John Holbrook, M.D., of the American Heart Association.

"We urge the FTC to put a stop to this deceptive and self-serving campaign by R. J. Reynolds. What Americans don't know about smoking is literally killing them," said Alfred Munzer, M.D., of the American Lung Association.

R. J. Reynolds has run more than 20 "public issue" advertisements in national magazines and newspapers since early last year. The most recent advertisement attacks the Multiple Risk Factor Intervention Trial (MRFIT), claiming no significant decline in risk of heart disease in men who quit cigarette smoking.

Lewis Kuller, M.D., one of the principal investigators of the MRFIT, said that on the contrary the study found that men who quit smoking had a coronary death rate almost 50% below those who continued to smoke. The study did not intend to examine whether cigarette smoking was a cause of heart disease; in fact, the scientific evidence is now conclusive and need not be re-examined, he said.

The coalition asked the FTC to require that R. J. Reynolds pay for corrective advertisements which would support the conclusion that smoking causes coronary heart disease. In addition, it urged newspapers and magazines to stop printing the R. J. Reynolds ads or print their counter ad called "The Science of Selling Cigarettes".

A spokesman for the tobacco company accused the health groups of trying to use a government agency to "stifle those who wish to speak out with another point of view". R. J. Reynolds is prepared to answer any questions the FTC may have about their advertisements, they said.

In 1983, the U. S. Surgeon General called smoking "the most important of the known modifiable risk factors for coronary heart disease in the United States". Cigarette smoking has been linked with an increased risk of dying for over 20 years.

* * * *

Hospital Data To Be Made Public

The government has issued a final rule that would give the public access to hospital statistics collected by peer review organizations (PROs).

The statistics would identify individual hospitals but not individual physicians.

In issuing its new rule, the Health Care Financing Administration (HCFA) rejected arguments from some business and consumer groups —including the Washington Business Group on Health and Ralph Nader's Health Research Group—that PROs should also be required to release physician-specific data.

The American Hospital Association and the American Medical Association had argued on the other hand that the final rule should scale back a proposed requirement that PROs release hospital-specific data. They argued that such information was misleading because it did not take into account the fact that some hospitals traditionally treat sicker patients.

These changes, too, were rejected by HCFA, and the final rule states that PROs "are an important source of information to aid consumers and consumer organizations in reaching informed decisions about the types of health care services that are offered". Information could include, for instance, mortality rates, costs, length of stay, volume, or infection rates by hospital or hospital department. Individual patient records may not be disclosed.

Some modifications allow hospitals an oppor-

tunity to explain its statistics, however. The PRO must give the hospital 30 days to comment before disclosing data and must include the hospital's comments with information that it releases. Another modification will permit researchers to have access only to the data the public has.

Representatives of the American Medical Peer Review Association, which represents many of the PROs, are unhappy with this change since it appears to have a detrimental effect on a research wing AMPRA has just set up. One goal of the research was to be the development of better quality of care measures and AMPRA officials believe they need physician specific data to accomplish this.

The "confidentiality" rule was one of four final regulations just issued by HCFA. The other rules govern the conduct of review, the appeals process, and sanctions under the PRO program. All have been due for months and widespread Washington rumor had suggested that the major hold up in the four sets of rules involved debate within the Administration over the release of the physician-specific information. The Office of Management and Budget was said to favor the release of the more specific information.

* * * *

'Quality' Focus Of New House Bill

Contending that Medicare "cost containment" is in danger of becoming "care containment", House Aging Committee Chairman Rep. Edward Roybal (D-CA) has introduced legislation to expand quality review activities of the program's peer review organizations (PROs).

Called the Quality Assurance Reform Act of 1985 (HR 1970), Roybal's bill would require the PROs to devote as much time and resources to monitoring quality as costs and would extend PRO review to all Medicare services, including those in physicians' offices.

The bill, which follows Aging Committee hearings focusing on potential quality problems in Medicare's prospective pricing system, would:

★ require that as of October 1, 1986, HHS stipulate in its award, administration and evaluation of PRO contracts that at least half of the PROs efforts are to be directed to quality review.

★ extend PRO review to physicians offices, nursing homes, home health agencies, and other providers by April 1, 1988.

★ direct PROs to maintain 24 hour hot lines for questions and complaints from Medicare providers and beneficiaries.

★ require each PRO to have five-to-seven member Consumer Advisory Board by October 1, 1986.

★ direct the Congressional Office of Technology Assessment to appoint a nine-member National Council on Quality Assurance.

★ increase PRO funding as compared to current law and adjusted for inflation, by 30% in 1986, 40% in 1987, and 50% in 1988 and subsequent years.

* * * *

House Sentiment Builds Against Physician Fee Freeze

An opening round of debate in the House of Representatives over the Reagan Administration's fiscal 1986 budget proposals indicated strong sentiment for softening the President's proposal to continue a Medicare freeze on all physician fees.

In three days of hearings before the House Ways and Means Health Subcommittee, only Health Care Financing Administration head Carolyne Davis, Ph.D., defended a budget proposal to continue the physician fee freeze for all physicians. American Medical Association President-elect Harrison Rogers, M.D., said the proposal was "discriminatory and counterproductive". Rep. Willis Gradison (R-OH) called it a "breech of faith". And Subcommittee Chairman Fortney (Pete) Stark (D-CA) said he "does not intend to support postponing the fee increase" for those who signed participating agreements.

Several subcommittee members also indicated that they are considering several alternatives to the President's budget proposals. In addition to modifying the physicians freeze, these include mandating second surgical opinions for Medicare, freezing Medicare reimbursement of hospital capital expenditures and requiring some income-related cost increases for beneficiaries.

Some members, including Stark and Gradison and New York Democrat Charles Rangel, revealed substantial irritation over HCFA's failure to produce a number of reports Congress needs to make refinements in the new Medicare prospective pricing system. One such report, due in December, was to define and list hospitals that treat "disproportionate shares" of indigent patients.

Congress has indicated several times that it believes prospective rates for these hospitals should be adjusted and Stark is now working with

the American Hospital Association to try to devise his own list of "disproportionate share" hospitals.

Despite repeated assertions that Medicare cuts might be acceptable as part of an across-the-board budget freeze — including defense spending and addressing some tax "loopholes" — some 20 witnesses unanimously opposed the President's present budget plan. They noted that Medicare has been cut by $25-30 billion over the past five years and suggested that changes in the system are threatening the prospective pricing system by destroying providers' faith in the government promises and eroding confidence in the quality of care.

In her defense of the physician freeze, HCFA's Davis maintained that the freeze delays (but does not break) a promise that physicians who signed participating agreements would have their fee profiles updated in October of 1985. The HCFA Administrator also said the budget anticipates that physicians will increase the volume of services they provide each patient by about 3%.

Dr. Rogers, a general surgeon from Atlanta, said that the only freeze Congress imposed in its last budget cycle was on physicians. He maintained that continuation of the freeze "would extend an unfair and extremely discriminatory practice" because "only physicians would be subjected to a two-year freeze". A continuation of the freeze, he said, would mean that Medicare payments to physicians in 1986 will be based on 1982 charges and "may prove counter-productive" since it could "discourage physicians from accepting assignment" and "treating Medicare patients". Furthermore, he said, it penalizes the 80% of physicians who responded to the AMA's call for a voluntary freeze on charges to all patients.

Responding to Dr. Rogers' comments, Rep. Stark observed that "although I rarely agree with the AMA, I just want them to know that for those physicians that responsibly accepted voluntary assignment, I think we ought to fulfill the promise that their fees would be allowed to rise".

* * * *

Medicare Bankruptcy Not Seen Until Near 2000

Medicare's hospital insurance fund is not likely to go bankrupt until 1998, according to the latest government report on the status of Medicare and Social Security.

The report from the Social Security Trustees also concludes that Medicare's supplementary medical insurance trust fund is "financially sound". A 1982 report predicted bankruptcy of the hospital fund by 1987 and last year's report anticipated bankruptcy in 1991.

In announcing the trustees' findings, Department of Health and Human Services Secretary Margaret Heckler attributed the improved condition of the hospital fund to "lower health care inflation and increased efficiency among health care providers, spurred in part by changes in Medicare policy".

The Secretary warned against Congressional complacency on Medicare reform, however, and said "good faith and strong medicine" will be required "in the months and years ahead".

The new projections assume enactment of the President's proposal to freeze hospital rates in 1986, and the trustees urged Congress to "take action to curtail" the rate of growth in both the hospital and supplemental medical funds.

At the end of calendar 1984 the hospital fund had a balance of $15.7 billion, $2.6 billion higher than had been predicted in last year's report. Under the trustees' most pessimistic economic assumption, the fund would remain in the black until 1992. Under the most optimistic assumption, the fund would remain healthy for at least the remainder of this century.

Under the moderate or middle range economic assumptions seen as most likely, the fund would climb steadily until it peaks at $76.3 billion in 1992 and then decline into insolvency by 1998. To produce long-term stability and keep the fund solvent over the next 25 years under this projection would require that benefits be reduced 19% or Medicare contributions increased 24%.

Unlike the hospital fund, which is financed through a payroll tax (set at 1.35% of earnings up to $39,600 this year), the supplemental medical insurance is financed through general revenues and premiums. In 1984, the program covered 29.4 million people and general revenue contributions amounted to $17.1 billion or 73.6% of all SMI income. About 22.3% of income came from premiums paid by the beneficiaries and the remainder came from interest payments on the SMI fund.

* * * *

PRO Progress Assessed By Congress

Nearly half of the nation's 54 Medicare Peer Review Organizations (PROs) have negotiated alterations in the cost and quality goals they agreed to in their contracts with the federal government.

In announcing what Medicare officials are calling "refinements" in the PRO's contract objectives, Health Care Financing Administration head Carolyne Davis, Ph.D., told a Senate subcommittee that 25 PROs have already negotiated changes and negotiations are continuing in several other states — including Rhode Island, Maine, Montana, and Wyoming.

Davis' announcement, which came at a hearing of the Senate Finance Health Subcommittee, appeared to reinforce earlier HCFA claims that the numerical objectives in the PRO contracts were not intended as quotas and were subject to change if more experience and data indicated change was warranted.

In addition to the contract changes, the HCFA Administrator also reported that four sets of long-delayed final PRO regulations had finally been released, that a Super-PRO contract to evaluate the PROs will be awarded by the end of June, and that her agency is planning pilot programs using concurrent review to prevent premature hospital discharges and to test PRO review of outpatient services.

Although the publication of the final regulations and the announcement of widespread contract renegotiations appeared to have blunted last summer's heated charges that the PRO objectives constitute arbitrary quotas, American Medical Association representative William Felts, M.D., and American Hospital Association Executive Vice President Jack Owen complained that delays in issuing the regulations have created situations harmful to physician and hospital relationships with PROs.

American Medical Peer Review Association President Howard Strawcutter, M.D., reported, however, that while PROs think HCFA is too concerned with the details and process of PRO operation, overall implementation of the program has gone well.

Sen. David Durenberger (R-MN), who crafted the law creating the PROs, remains concerned nevertheless about several other issues facing the PROs. These include OMB's "continued resistance" to the PROs, periodic reports of quality problems such as premature discharges, and a fear that outpatient services may be eating up much of the savings.

Like Durenberger, who emphasized that Congress view PROs as "Medicare's vehicles to assure quality", witnesses generally called for increased emphasis on and further improvements in the quality objectives of the PROs. Both the Senator and the professional groups urged HCFA to solicit professional and public input as contracts are redrawn and renegotiated about a year from now. All are viewing the Super-PRO contract as an important part of that process.

HCFA official Phil Nathanson assured the subcommittee that the agency will have at least two semi-annual Super-PRO reports in hand before it begins to evaluate the PROs performance. But most witnesses were critical of the delay in awarding the contract which was withdrawn, redesigned and reissued after initial bids from the American Medical Association and three other organizations were determined to cost more than HCFA had available for the contracts.

Willis Goldbeck of the Washington Business Group on Health blasted the idea of the AMA evaluating the PROs as a conflict of interest. But Dr. Felts reported that the AMA will respond to the new bid proposal and will continue to oversee the PRO's progress through a new monitoring program, even if the Super-PRO contract is awarded to another bidder.

* * * *

Taking The Stick To Graduate Medical Education

Federal budgetary pressures, a predicted surplus of physicians and cost-conscious insurers and businesses are forcing medical educators to reassess both the funding and the makeup of the graduate medical education system.

Funded primarily through patient revenues, the design of the system—widely acknowledged as one of the world's finest but frequently accused of turning out an army of specialists in a world that needs more primary care physicians—until now has been left largely in the hands of physicians and the medical schools and hospitals which train them. Federal attempts to influence graduate medical education were limited to the carrot approach as various subsidies were offered to encourage the graduate training of primary care physicians.

But the national debate that initially focused simply on curbing Medicare spending has now been expanded to include the possibility of using Medicare as a stick to shape graduate medical education.

The Reagan Administration has proposed to cut Medicare payments for medical education and

eliminate all federal grants for health professions training.

Sen. Dan Quayle (R-IN), who has suggested a plan that would provide Medicare reimbursement only to training programs in which at least 70% of residency positions were in primary care and at least 75% of the residents were graduates of American schools approved by the Liaison Committee on Medical Education. The plan, which Quayle outlined at a hearing of the Senate Labor and Human Resources Committee, would also require that hospitals and other teaching programs have an affiliation with a medical school. The 70/30% ratio of primary care to specialty physicians might be applied to some larger base than individual institutions, and a national commission would be set up to determine whether the ratio is appropriate and to recommend changes in the future.

A number of other Congressmen are also designing proposals to modify Medicare's approach to graduate education costs. At an April hearing of the House Commerce Committee Health Subcommittee Chairman Rep. Henry Waxman (D-CA) pointedly contrasted the "cost-based and open-ended" Medicare and Medicaid approach with "limited" and "sharply focused" federal grants for health professions training.

Other Senate players in addition to Quayle include Majority Leader Robert Dole (R-KS) and Finance Health Subcommittee Chairman David Durenberger (R-MN). Durenberger, who sparked Congressional interest in medical education funding last fall, has backed away from a block grant approach he introduced at that time. He is now working with Dole and Sen. Lloyd Bentsen (D-TX) to design an alternative to the President's budget proposals. As as alternative to the Reagan Administration's proposal to halve the current 11.59% factor Medicare uses to adjust payments for indirect costs of medical education, the Senators reportedly have considered a 9% factor. As one possible alternative to the President's proposed freeze on payments for the direct costs of medical education, they have considered a plan advanced by Johns Hopkins University President Robert Heyssel, M.D., to limit Medicare funding for graduate training to some "finite period", such as three years.

The Heysell proposal has also caught the attention of Quayle and Waxman and been recognized by the Association of American Medical Colleges as one of several alternatives that might be pursued. The AAMC and other key players have been reluctant to recommend or endorse a particular solution, however, and the confusion and Congressional interest have spawned a multitude of studies and task forces. The AAMC, the AMA and the AHA have formed separate advisory committees on the subject and have held some joint meetings. Thus far, however, these meetings appear to have been more successful at delineating areas of difference than agreement.

In the face of such controversy, all the involved groups are urging the legislators not to take what AMA representative Robert Stone, M.D., termed "precipitous action that could undermine not only our graduate medical education system but the quality of our health system as a whole".

* * * *

FTC Issue Apears To Fade

The AMA vs. FTC feud over regulation of professionals, once a subject of heated debate, has receded from prominence.

In 1982, it prompted congressional dispute and widespread media publicity; last month, it received only mild attention from committees in the House and Senate, a couple of newspaper reporters, and a handful of high school students on tours through Congress.

Two factors are credited with the change in mood; first, a recent Supreme Court ruling that clarified the role of state regulations in antitrust cases and, second, improved communication between the AMA and the FTC over areas of professional self-regulation and discipline.

Because of these new developments, the AMA will no longer push for a professions provision spelling out FTC's authority. Neither will the American Bar Association press that earlier position.

"It is no longer necessary to adopt specific language concerning the professions", AMA president Joseph F. Boyle, M.D., told Sen. Robert W. Kasten, Jr. (R-WI) of the Consumer Subcommittee of the Senate Committee on Commerce, Science and Transportation on hearings about FTC Reauthorization. "On the contrary, we feel that such language could be counterproductive as establishing rigid limits in a period of mutual discussion and evolving law."

The FTC, for its part, has become increasingly willing to recognize the role of self-regulation by physicians. The FTC has said it supports self-

policing and discipline of physician by groups such as the AMA, but will continue to monitor professional conduct over anti-competitive practices, price fixing, fraud, deceptive advertising, and restraints on trade. Unlike the AMA, the FTC still seeks specific language that would spell out its authority over professionals.

The conciliation, if adopted by Congress, means that anti-trust disputes about state regulation of professionals will end up being resolved in court rather than being set by statute. This change is accepted by both the AMA and traditional adversaries such as Congress Watch.

In addition, the Supreme Court decision *Southern Motor Carriers* case provided important guidance about the application of anti-trust laws to state-supervised activities.

The Supreme Court decision in the recent *Southern Motor Carriers* case was significant because it loosens conditions under which the professions are covered by state laws and thus protected from FTC intervention, according to AMA's testimony. In the past, the FTC would steer clear of anti-trust situations that were part of an active, "compulsive" state policy—for instance, situations in which a state forced professionals to set certain prices. The *Southern Motor Carriers* decision says that there doesn't have to be evidence that a state forced professions to set rates—only that the state allowed professions to set rates.

For instance, the decision may insulate doctors in the Maine Medical Society who meet with members of the state Medicaid board to discuss fee structure. Although the state does not require that these groups meet, it allows them to—and hence would protect them from FTC regulation.

In fact, the language of the professions amendment could actually be counterproductive, said Dr. Boyle, by inhibiting disciplinary actions by professional groups against negligent physicians. "State boards are able to identify negligent physicians and have the opportunity to exert discipline... But there is the perception that this would be interfered with by restrictive language."

The professions language is supported by the nurses and opticians employed by chain drug stores. Recent FTC actions—such as the "Eyeglasses I" and "Eyeglasses II" rules that removed restrictions on advertising and the release of prescription to a patient—have helped keep down costs, the opticians said. The position also is opposed, although for different reasons, by the dentists. The American Dental Association witness predicted that an "overzealous" FTC will see no limit on its authority over state laws; Congress should define the FTC's authority to invalidate state laws, he said.

* * * *

Feds Urge DPT Shots

Physicians should resume giving the complete DPT schedule of vaccines to the 2 million children whose shots had been postponed during the recent vaccine shortage, federal officials have announced.

On April 25, Connaught Laboratories once again offered full-scale distribution of the vaccine, ending the shortage. An estimated 2.2 million doses now are ready for immediate shipment to doctors and public health officials.

Because of the shortage, the Public Health Service asked physicians to postpone administering the fourth and fifth doses of the vaccine, usually given to children 18 months and 4 to 6 years of age. Now, supplies are adequate to meet national needs.

It is especially important to provide the DPT vaccine to children scheduled to enter kindergarten or first grade this fall, PHS officials say.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

BACTERIAL PNEUMONIA

Presented by Kevin McCusker, M.D., *August 22, 7:00 p.m.,* L J's Restaurant, Fayetteville. One hour Category I credit. Sponsored by UAMS AHEC-NW.

NUTRITION AND AGING

Presented by David A. Lipschitz, M.D., and Ronni Chernoff, Ph.D., *September 11-12, (September 11th 8:00-5:30; September 12th 8:30-4:30),* Excelsior Hotel, Little Rock. Six hours Category I credit. Sponsored by UAMS. Fees: $175 for physicians, $100 other health professionals, $50 full-time UAMS and VA staff.

REGIONAL PERINATAL CONFERENCE

Presented by Frank Miller, M.D., *September 13-14,* Fayetteville Hilton, Fayetteville. Time, credit hours, fee to be announced. Sponsored by UAMS.

ABDOMINAL TRAUMA

Presented by John B. Cone, M.D., *September 20-21,* UAMS Education Building Amphitheater, Little Rock. Time, credit hours, fee to be announced. Sponsored by UAMS.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC-South Arkansas.
Colposcopy-Pap Smear Clinic, fourth Tuesday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, second and fourth Thursday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pediatric Conference, second and third Friday, 12:30 p.m. to 1:30 p.m., (second Friday, Warner Brown Hospital, third Friday, Union Medical Center).

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology-Mortality Conference, August 8 and September 12, 3:00 p.m., Conference Room, Building 1.
ICU Conference, August 27 and September 24, 1:30 p.m.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.
Pediatric Seminar, September 26.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Respiratory Care Case Conference, each Wednesday, 1:00 p.m., Second Floor Classroom.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neurology Conference, first Thursday, 8:00 a.m., Second Floor Classroom.

Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
General Pediatric Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Surgery Conference, each Monday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pathology Conference, first, second, fourth and fifth Thursday, 12:00 noon to 1:00 p.m., Pathology Library.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #2.

LITTLE ROCK — ST. VINCENT INFIRMARY

Interhospital GI Problems Conference, first Monday, 6:00 p.m. to 7:30 p.m., Classroom 3, Education Wing. CANCELLED FOR JULY AND AUGUST.
Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing. CANCELLED FOR JULY AND AUGUST.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory. CANCELLED FOR JULY AND AUGUST.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interhospital GI Problems Conference, first Monday, 6:00 p.m., St. Vincent Infirmary, Classroom 3, Education Wing.
OB/Gyn Grand Rounds, each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/135.
Mental Health Services Grand Rounds, dates TBA. 10:00 a.m., Arkansas Mental Health Services Administration Building, third floor conference room.
Psychiatry Grand Rounds, each Thursday, 12:00 noon, UAMS Child Study Center Auditorium.
Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Ed II Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS Ambulatory Care Center Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Ed II Building, Room G/135.
Arkansas Academy of Pathology, first Wednesday, 5:30 p.m., Coy's Restaurant.
Surgical Science Conference, each Saturday, 8:00 a.m., Ed II Building, Room G/131.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Psychiatry Service Lecture Series, each Wednesday, 1:00 p.m., NLRVA, Building 170.
VA Medicine Service Teaching Conference, each Monday, 3:30 p.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC-SOUTHWEST

Tumor Conference, August 7 and September 4, 7:00 a.m., St. Michael Hospital.
Chest Conference, September 18, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

THINGS TO COME

August 1-4

38th Annual Scientific Assembly, Arkansas Academy of Family Physicians. Excelsior Hotel and Statehouse Convention Center, Little Rock. The program is acceptable for 17 Prescribed Hours. Registration fee is $100 for members if paid by June 15; after that date, the fee is $150. Registration fee for non-members is $150 if paid by June 15; after that date, the fee is $175. Residents may register for $10; there is no registration fee for students.

Optional "hands on sessions" are available. Registration fees are $100 for members; $125 for non-members for one of the following: (1) Colposcopy, (2) Treadmill Stress Testing, (3) Flexible Sigmoidoscopy, (4) Cryosurgery, or (5) Non Invasive Diagnosis of Vascular Disease. These courses will be held Thursday, August 1, from 8:00 a.m. to 12:00 noon and have been approved for 4 prescribed hours.

The Scientific Program has been announced as follows:

Thursday, August 1,
Harold Hedges, M.D., Moderator

1:00 p.m. Medical Marketing
Andrew P. Morley, M.D., President, Georgia Academy of Family Physicians and Past Chairman, AAFP Public Relations Committee

3:00 p.m. Practice Pearls
James R. Weber, M.D., Associate Clinical Professor, Department of Family and Community Medicine, University of Arkansas College of Medicine

4:00 p.m. Computers in a Medical Practice
Herbert Fendley, M.D., Vice President, Automated Medical Systems, Inc., Little Rock

Friday, August 2, Morning Session,
Robert Holder, M.D., Moderator

8:30 a.m. Sports Medicine—An Overview
Kurt M. W. Niemann, M.D., Professor and Director, Division of Orthopaedic Surgery, University of Alabama, Birmingham

9: 30 a.m. Indications for Holter Monitoring
James E. Boger, M.D., Assistant Clinical Professor of Cardiology, Department of Medicine, University of Arkansas College of Medicine

11:00 a.m. Magnetic Resonance Imaging
Robert W. Laakman, M.D., Radiology Associates, P.A., Little Rock

Friday, August 2, Afternoon Session,
Charles H. Rodgers, M.D., Moderator

1:30 p.m. Ampicillin Resistant Hemophilus Influenza
Terry Yamauchi, M.D., Professor of Pediatrics and Chief, Pediatric Infectious Diseases, University of Arkansas College of Medicine

3:00 p.m. The Vaccine Controversy
Terry Yamauchi, M.D.

4:00 p.m. Classification and Management of Headaches
James Dexter, M.D., Chairman, Department of Neurology, University of Missouri School of Medicine, Columbia

Saturday, August 3, Morning Session,
Amail Chudy, M.D., Moderator

8:30 a.m. Estrogens, Menopause and Osteoporosis
Kermit E. Krantz, M.D., Professor and Chairman, Department of Gynecology and Obstetrics, University of Kansas College of Medicine, Kansas City

9:30 a.m. Management of the Premenstrual Syndrome
Kermit E. Krantz, M.D.

10:45 a.m. Our Changing Society—Geriatrics
James M. Turnbull, M.D., Professor and Chairman, Quillen-Dishner College of Medicine, Department of Psychiatry, East Tennessee State University, Johnson City

Saturday Afternoon, August 3,
Jerry Mann, M.D., Moderator

2:00 p.m. Our Changing Society—Sexuality
James M. Turnbull, M.D.

3:15 p.m. Anatomy of a Medical Marriage (for registrants and spouse)
Gordon H. Deckert, M.D., David Ross Boyd Professor and Head of

Department of Psychiatry and Behavioral Sciences, University of Oklahoma Health Sciences Center, Oklahoma City
Jane Chew Deckert, B.S., M.S., Medical Physiologist, Oklahoma City

Sunday Morning, August 4

9:30 a.m. How to Fight Fair in a Medical Marriage (for registrants and spouse)
Gordon H. Deckert, M.D.
Jane Chew Deckert, B.S., M.S.

For further information, contact Carla Mayfield, Executive Vice President of the Arkansas Chapter of the AAFP, 7509 Cantrell Road, Little Rock 72207; telephone 501-663-9075.

September 6-8

Survival of Quality Medical Care in a Competitive Arena. 12 hours Category I, AMA/PRA. Registration fee: $270 for SMA members; $345 for nonmembers.

Protecting Your Medical Practice: Planning for Payment Changes. 12 hours Category I, AMA/PRA. Registration fee: $270 for SMA members; $345 for nonmembers.

Malpractice Prophylaxis. 13 hours Category I, AMA/PRA. Registration fee: $270 for SMA members; $345 for nonmembers.

Meetings to be held in San Antonio, Texas. Sponsored by Southern Medical Association. For further information, contact Jeanette Stone, Southern Medical Association, Post Office Box 190088, Birmingham, Alabama 35219-0088; telephone 1-800-423-4992.

September 9-13

Fourth International Conference on Neurotoxicology of Selected Chemicals. Theme: Neurotoxicology in the Fetus and Child. The Excelsior Hotel, Little Rock. Volunteer platform and/or poster presentations are invited. The Abstract deadline is August 15, 1985. For further information, contact Dr. Joan M. Cranmer, Conference Chairman, Department of Pediatrics — #512B, University of Arkansas for Medical Sciences, Little Rock 72205; telephone (501) 661-5997 or 661-5958.

1986

February 6-8

The Advanced Hair Replacement Surgery Symposium. Sponsored by the American Academy of Facial Plastic and Reconstructive Surgery. Stough Dermatology and Cutaneous Surgery Clinic and the Majestic Hotel, Hot Springs. The program is accredited for 16 hours in Category I. Registration fee is $525 for AAFPRS members if received before December 31; $575 after December 31. Non-member registration fee is $600 if received before December 31; $650 after December 31. Residents may register for $225. Fees include meals and social functions.

For further information, contact Kathleen Masterson, Congress Coordinator, The Stough Dermatology and Cutaneous Surgery Clinic, P.A., Doctors Park Building, Hot Springs 71901; telephone 624-0673.

March 24-29

Counseling Strategies for Physicians will include discussion of social change, family violence, addiction, human sexuality, and problems encountered in treating teenagers, minority groups, aging clients, and pregnant women. Sponsored by the University of Texas Health Science Center at Houston. Oahu, Hawaii. 17 Hours AMA/PRA Category I; AAFP Prescribed. Registration $325. For further information, contact 1-800-332-8747 (outside Texas) or inside Texas 1-800-392-4900-437, Program Code 975 DLB.



PERSONAL AND NEWS ITEMS

DR. WARREN SPEAKER

Dr. George Warren of Smackover spoke at a recent meeting of the Boone County Multiple Sclerosis support group.

DR. CRUCETTI LOCATES

Dr. James B. Crucetti has begun practice in the

Vilonia Shopping Center under the auspices of the National Health Service Corps.

DR. BAKER SPEAKS

Dr. Max Baker of Fort Smith spoke on "Alzheimer's Disease" at a program sponsored by Goddard United Methodist Church.

DR. HILL APPOINTED

Dr. Donald F. Hill of Russellville has been appointed to a Special Task Force to Study Cardiac Catheterization Criteria and Standards for Arkansas. The task force will develop standards and criteria on development of catheterization laboratories and their relationship to certificate of need.

DR. HARRIS GUEST SPEAKER

Dr. W. Turner Harris of Little Rock spoke on "Nuclear Medicine" at a recent meeting of the Batesville Kiwanis Club.

DR. GUENTHNER HONORED

Dr. John F. Guenthner was recently honored by citizens in Baxter County. Governor Bill Clinton was among those at the dedication of the John F. Guenthner Medical Library at Baxter County Regional Hospital. Dr. Guenthner was honored for his forty-five years of medical service to the community.

DR. MARTIN SPEAKS

Dr. Richard H. Martin of Little Rock spoke on "Coronary Heart Disease—Evaluation and Treatment" at a recent Continuing Medical Education Program sponsored by the Baxter County Regional Hospital.

DR. BURGE HONORED

Dr. John P. Burge of Lake Village, president of the Arkansas Medical Society, was the honored guest of the Crittenden County Medical Society at its recent meeting.

DR. WRIGHT SPEAKER

Dr. Larry D. Wright of Rogers was a speaker at a national conference on "Careers in Geriatric Medicine". His presentation focused on the importance of a geriatric emphasis in the practice of general internal medicine.

NEW DIVISION CHIEFS ANNOUNCED

The Department of Medicine of the University of Arkansas College of Medicine has announced the appointment of three new division chiefs: Dr. William E. Golden, General Medicine; Dr. Robert Walker Harrison, III, Endocrinology; and Dr. John E. Buerkert, Nephrology.

DR. FERRIS ELECTED

Dr. Ernest J. Ferris has been elected secretary-treasurer of the Society of Chairmen of Academic Radiology Departments. Dr. Ferris will be responsible for planning and coordinating the organization's annual meeting.

SPECIALTY ORGANIZATIONS

New officers of specialty organizations not previously reported are:

Arkansas Hand Club: Dr. James Beckman of Fayetteville, president; Dr. S. Berry Thompson of Little Rock, vice-president.

Arkansas Urologic Society: Dr. Johnson Baker of Little Rock, president; Dr. Ladd J. Scriber of Jonesboro, secretary.

Arkansas Psychiatric Society: Dr. Philip Mizell of Little Rock, president; Dr. Rick Smith of Little Rock, secretary.

Arkansas Dermatologic Society: Dr. Ron Rasberry of Searcy, president; Dr. Burton Moore of Little Rock, secretary-treasurer; Dr. R. Cole Goodman of Fort Smith, secretary-treasurer.

PANEL DISCUSSION

Drs. Ed Barron, Forrest Miller, Walter O'Neal, Guy Gardner, and Everett Tucker presented a panel discussion for a public forum on cancer sponsored by the Baptist Medical Center in Little Rock.

DR. CARL WILSON

Sparks Regional Medical Center in Fort Smith recently held a dedication of the Carl Wilson Memorial Education Fund. During the ceremony, a Carl Wilson Memorial Plaque was unveiled. The fund will promote practice of Urology through seminars, etc. Contributions to the fund may be mailed to Sparks Regional Medical Center. Dr. Wilson was the first fully trained Urologist to practice in Fort Smith. He had served as Chief of Staff at Sparks for six terms and chief financial officer of Holt-Krock Clinic.

DR. THOMPSON IN DELIGHT

Dr. Lewis E. Thompson, a Family Physician, has joined the Southwest Doctors Clinic, practicing in Delight.

DR. KRAMER APPOINTED

Dr. Ralph Kramer of Fort Smith has been appointed to the Board of Trustees of the Sparks Regional Medical Center.

GURDON GAINS PHYSICIANS

Drs. Robert L. Beren and Allen Weir have joined the Gurdon Medical Clinic for the general practice of medicine.

DR. PEARSON SPEAKS

Dr. Richard Pearson of Rogers spoke on

"Changes in Health Care" at a recent meeting of the Benton County Democrat Club.

DR. McKELVEY SPEAKS

Dr. Richard E. McKelvey of Clarksville was guest speaker for a workshop on Breast Disease, which was sponsored by the Johnson County Regional Hospital.



DR. FAWAD H. WALAJAHI

Dr. Walajahi is a new member of the Arkansas County Medical Society. He is a native of Hyderabad, India.

He was graduated from Osmania University in Hyderabad in 1971 and is a 1978 graduate of the Osmania Medical College. His internship was with the Osmania General Hospital. Dr. Walajahi trained in Surgery at the St. Francis Medical Center in Trenton, New Jersey, from 1979 to 1981. He was an Anesthesiology resident at Monmouth Medical Center in Long Branch, New Jersey, from 1981 to 1983. He was an Anesthesiology Fellow specializing in Obstetrics and Pediatrics at the University of Arkansas from 1983 to 1984.

Dr. Walajahi has practiced Anesthesiology at the Jefferson Regional Medical Center in Pine Bluff since July 1984. His office address is 1801 West 40th Street, Suite 2-B.

DR. CHARLES W. PATTERSON

Dr. Patterson, a native of Santa Monica, California, has joined the Benton County Medical Society.

His pre-medical education was with the California Polytechnic State University in San Luis Obispo, California. He is a 1966 graduate of the University of Louisville School of Medicine in Kentucky. His rotating internship was with Bethesda Hospital in Cincinnati, Ohio. His residency was with the Rollman Psychiatric Institute in Cincinnati.

Dr. Patterson practiced in Middletown, Ohio, and Mesa, Arizona, before moving to Northwest Arkansas in April.

Dr. Patterson specializes in Psychiatry. His office is at 121 West Township #21 in Fayetteville.

DR. H. LYNN WIGGINS

Dr. Wiggins, a new member of the Craighead-Poinsett County Medical Society, was born in Mansfield, Louisiana.

He is a 1977 graduate of the Louisiana State University and a 1979 graduate of the Louisiana State University School of Medicine in Shreveport. His internship and residency in Surgery were with the North Carolina Baptist Hospital in Winston-Salem, North Carolina. Dr. Wiggins is board certified in General Surgery. He began practice in Jonesboro in July 1984.

Dr. Wiggins specializes in General Surgery with his office at 211 East Matthews in Jonesboro.

DR. JAMES R. BRAUN

Dr. Braun, a native of Brookings, South Dakota, has joined the Garland County Medical Society.

Dr. Braun is a 1974 graduate of the University of South Dakota and a 1979 graduate of the University of Alabama School of Medicine. His internship was with the Pensacola Education Program at the Baptist Hospital in Pensacola, Florida. His residency in Opthalmology was with the University of Arkansas College of Medicine.

Dr. Braun practices Opthalmology in the Meyer Building at 505 West Grand Avenue in Hot Springs. He is associated with Dr. Tom Wallace.

DR. G. DON SLATON

Dr. Slaton has also joined the Garland County Medical Society. He was born in Osceola.

Dr. Slaton was graduated from Arkansas State University in 1975 and from the University of Arkansas College of Medicine in 1979. His internship, residency, and a two-year Gastroenterology Fellowship were also with the University. Dr. Slaton is board certified in Internal Medicine; he will take the examination for board certification in Gastroenterology in September 1985.

Dr. Slaton practices Gastroenterology at 304 St. Louis in Hot Springs.

* * * *

The Pulaski County Medical Society has five new members:

DR. ROBERT W. BARNES

Dr. Barnes was born in Chicago, Illinois.

Dr. Barnes received his Bachelor of Arts degree from the University of Colorado School of Medicine in Denver in 1958. He received his medical degree in 1961 from the University of Illinois College of Medicine in Chicago.

His first year of training was at the University of Illinois. Dr. Barnes trained in General, Thoracic, and Cardiovascular Surgery at the University of Washington Affiliated Hospitals in Seattle. He served as a United States Public Health Services Fellow in Peripheral Vascular Surgery at the same institution. He is board certified in Surgery and Thoracic Surgery.

Dr. Barnes served as an instructor in Surgery at the University of Washington School of Medicine in Seattle. He was an Assistant Professor and Associate Professor of Surgery with the University of Iowa Hospitals and Clinics in Iowa City and served as Professor of Surgery at the Medical College of Virginia in Richmond.

Dr. Barnes is Professor and Chairman of the Department of Surgery at the University of Arkansas College of Medicine.

DR. FREDERICK R. JELOVSEK

Dr. Jelovsek was born in Waukegan, Illinois.

He is a 1965 graduate of Johns Hopkins University in Baltimore, Maryland, and a 1969 graduate of the University of Michigan Medical School in Ann Arbor. His training in Obstetrics-Gynecology was with the University Hospital in Ann Arbor. He is board certified in his specialty.

Dr. Jelovsek served in the United States Army and was a member of staff at Duke University Medical Center in Durham, North Carolina, prior to coming to Arkansas.

Dr. Jelovsek joined the staff of the Department of Obstetrics-Gynecology at the University of Arkansas College of Medicine in 1984.

DR. F. PATRICK MALONEY

Dr. Maloney was born in Pittsburgh, Pennsylvania. He is a 1958 graduate of the St. Vincent College in Liatrobe, Pennsylvania, and a 1962 graduate of the University of Pittsburgh School of Medicine in Pennsylvania.

Dr. Maloney served his internship at St. Francis Hospital in Pittsburgh, Pennsylvania. His training in General Practice Medicine was with Johns Hopkins School of Hygiene and Public Health in Baltimore. He served a two-year fellowship in Medicine and Genetics at Johns Hopkins Hospital. Dr. Maloney also trained in Physical Medicine and Rehabilitation at the University of Minnesota Affiliated Hospitals in Minneapolis, Minnesota. He is board certified in Physical Medicine and Rehabilitation and in General Preventive Medicine.

Dr. Maloney is Professor and Head of the Division of Rehabilitation Medicine at the University of Arkansas College of Medicine and Chief of Rehabilitation Medicine Services at the Veterans Administration Medical Center in Little Rock.

DR. ERIC D. TAFT

Dr. Taft, a native of Ohio, was graduated from the University of Tulsa, Oklahoma, in 1977 and from the University of Oklahoma College of Medicine in Oklahoma City in 1981. His training in Pathology was with Parkland Memorial Hospital in Dallas.

Dr. Taft has joined the staff of Doctors Hospital in Little Rock for the practice of Pathology.

DR. CLAY NORRIS WELLS

Dr. Wells, a native of McComb, Mississippi, did his undergraduate studies at Asbury College in Wilmore, Kentucky, and Millsaps College in Jackson, Mississippi. He is a 1946 graduate of the Louisiana State University School of Medicine in New Orleans. He received a Master of Public Health degree in 1970 from the University of California in Berkeley.

Dr. Wells served his rotating internship at the University Hospital in Birmingham, Alabama. His Obstetrics-Gynecology residency was with the United States Naval Medical Center in Bethesda, the United States Naval Hospital in Long Beach, and the United States Air Force Hospital at Maxwell Air Force Base in Alabama. Dr. Wells is board certified in Obstetrics-Gynecology.

He served as Chief of the Obstetrics and Gynecology Department at Maxwell Air Force Base and has also served as Chief of Obstetrics Service at the University of Alabama School of Medicine in Birmingham.

Before moving to Arkansas, Dr. Wells practiced in Birmingham, Alabama; Idaho Falls, Idaho; Berkeley, California; New Orleans, Louisiana; Charleston, South Carolina; Providence, Rhode Island; and Titus, Alabama. He moved to Little Rock in 1978.

Dr. Wells is affiliated with the Department of

Obstetrics and Gynecology of the University of Arkansas College of Medicine.

* * * *

DR. LLOYD H. PLEMMONS

Dr. Plemmons, a native of Asheville, North Carolina, has joined the Tri-County Medical Society.

His pre-medical education was with Mars Hill College and Wake Forrest College in North Carolina. He is a 1961 graduate of the University of Tennessee Center for Health Sciences in Memphis.

Dr. Plemmons practiced in Somerville, Tennessee, for twenty years. He was on the staff of the Western Mental Health Institute in Bolivar, Tennessee, for two years.

Dr. Plemmons is in General Practice at Cherokee Village, with his office at the Village Mall.

DR. DON HAGLER COLE

Dr. Cole was born in Tulsa, Oklahoma. He is a new member of the Washington County Medical Society.

Dr. Cole is a 1950 graduate of Haverford College in Pennsylvania and a 1954 graduate of the Temple University School of Medicine in Philadelphia, Pennsylvania. His internship was with St. Luke's Hospital in Denver, Colorado, and his residency in Psychiatry was with Temple University School of Medicine in Philadelphia. He also served as an instructor in the Department of Psychiatry at Temple University. Dr. Cole served with the United States Army Medical Corps from 1956 to 1958.

Dr. Cole located in Fayetteville in 1984. He is associated with Charter Vista Hospital at 4171 Crossover Road.

RESIDENT MEMBERS

DR. KATHRYN DUPLANTIS

Dr. Duplantis, a 1979 graduate of the Medical College of Virginia School of Medicine of Virginia Commonwealth University, has joined the Arkansas County Medical Society. She is in residency training in Dermatology at Memphis.



RESOLUTIONS



DR. E. LLOYD WILBUR

WHEREAS, the members of the Pulaski County Medical Society note with sincere sorrow the recent death of an esteemed colleague, E. Lloyd Wilbur, M.D., and

WHEREAS, he was a valued member of the Society for thirty-two years and had been recognized for his knowledge and devotion to his chosen specialty of pathology, and

WHEREAS, he was known for his outstanding leadership in heading for many years the Department of Pathology at Baptist Medical Center.

BE IT THEREFORE RESOLVED:

THAT, this resolution be adopted and made a part of the permanent archives of this Society, and

THAT, a copy of this resolution be presented to Dr. Wilbur's family as an expression of our deepest sympathy, and

THAT, a copy be forwarded to the Journal of the Arkansas Medical Society for publication.

ADOPTED: Pulaski County Medical Society
May 15, 1985





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For additional information, contact the Physician Placement Service, Arkansas Medical Society, Post Office Box 1208, Fort Smith, Arkansas 72902.

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ARKANSAS MEDICINE TODAY



TB kids on fast track

Children's tuberculosis is being successfully treated in Arkansas with just one month of daily isoniazid and rifampin, followed by eight months of semiweekly treatments, reports Dr. Rosalind S. Abernothy of the University of Arkansas, Little Rock.[1] In oddition to halving treatment time, the new TB therapy reduces drug costs by three-fourths. Most symptoms cleared in a few weeks, remarks Dr. Abernathy, and all cultures were negotive in two months.[2] This is especially significant because in 1981, 1,681 of the 27,373 new known U.S. TB victims were under 14 years old. And it's in the trodition of Arkansas medicine, which pioneered the adult nine-month TB therapy.[1]

More than a pipe dream

Inhalation patterns may determine why cigarette smokers hove higher incidences of carcinoma of the lung, emphysema ond heort disease than pipe smokers. Researchers at the University of Arkansas for Medical Sciences and the Little Rock VA Medical Center found thot pipe smokers who had never smoked cigarettes inhaled only minimally.[3] This was evidenced by low plasma nicotine concentrations after pipe smoking. By contrast, those who smoked both pipes and cigarettes had high plasma nicotine levels and therefore must have inhaled pipe smoke. Most former cigarette smokers who had switched to pipes had low plasma nicotine, indicating they had stopped inhaling. This suggests that some individuals can indeed reduce the risks of smoking by switching to a pipe. You can determine whether they've stopped inhaling by checking their plasma nicotine or carboxyhemoglobin.

References: 1. *Medical World News*, Mar 14, 1983, p. 126.
2. Abernathy RS, *et al: Pediatrics 72*:801-86, Dec. 1983.
3. McCusker K, McNabb E, Bone R: *JAMA 248*:577-578, Aug 6, 1982.

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Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

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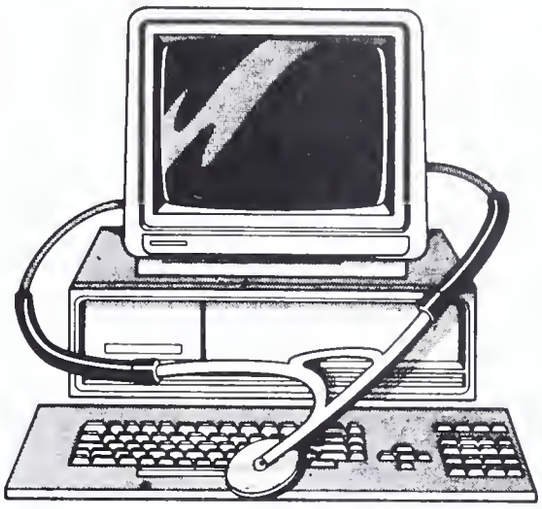
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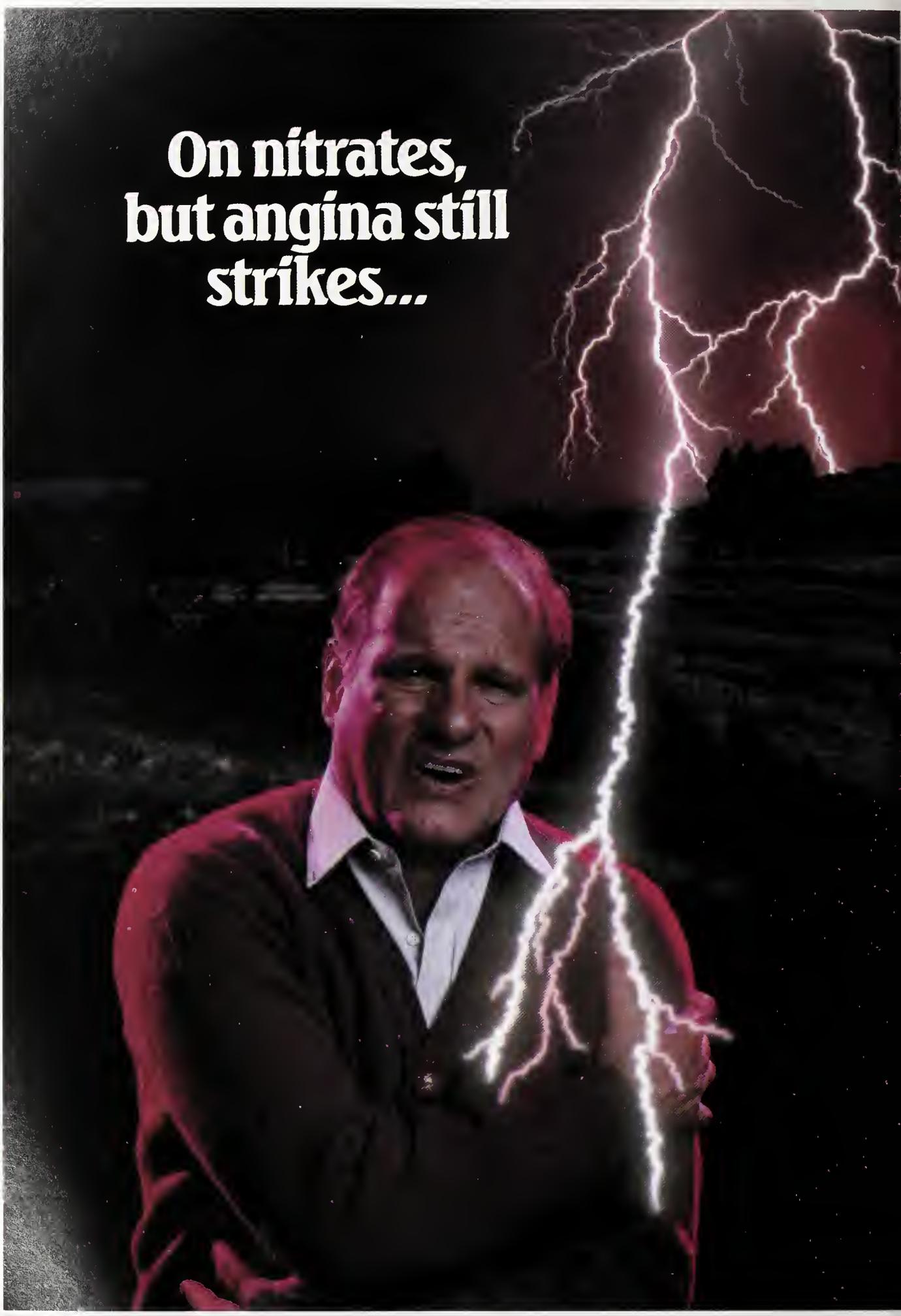
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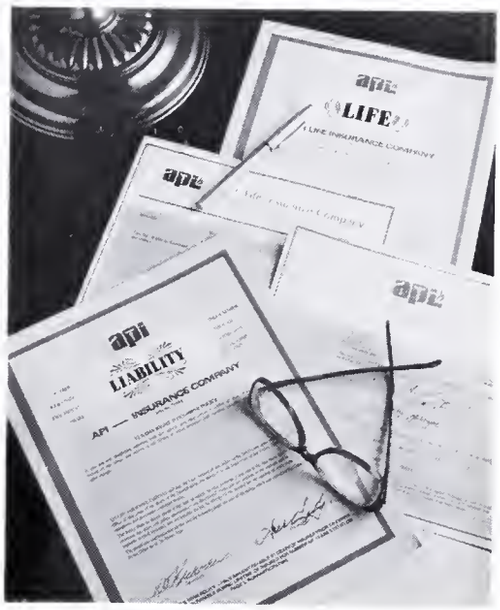
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Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

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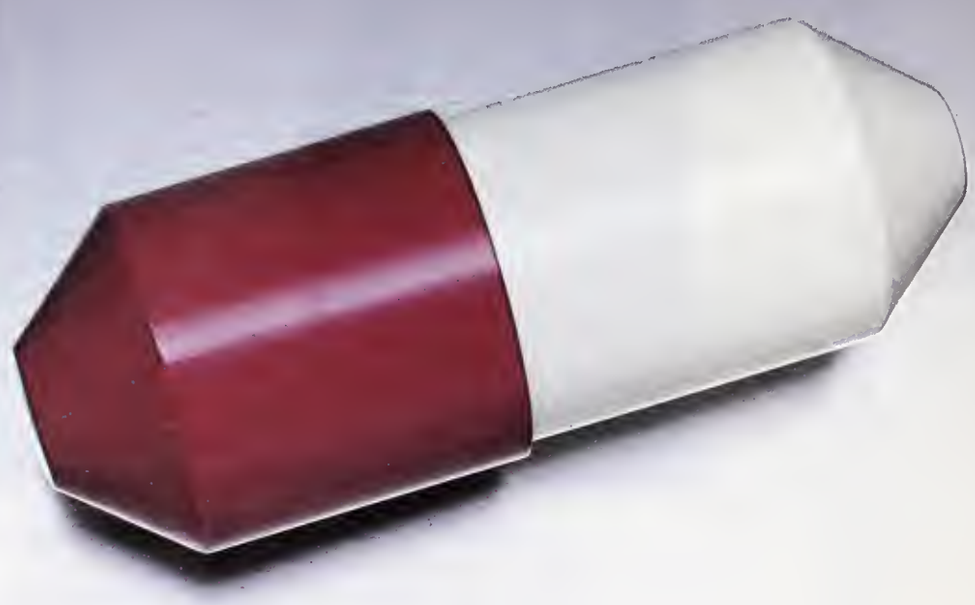
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Management of Lower Gastrointestinal Bleeding

Don Slaton, M.D.*

Despite major advances made in the diagnosis and management of upper G.I. bleeding, massive lower G.I. bleeding still remains a challenging and difficult problem. The successful management of patients with acute G.I. bleeding depends on the accurate localization of the site of hemorrhage. In the past, this problem gave rise to such procedures as a transverse colostomy to determine in which part of the colon the bleeding occurred. The application of flexible, fiberoptic endocsopy has proven very effective in the accurate localization of bleeding sites in the upper G.I. tract, but it is of limited use in the evaluation of small and large bowel in patients with active lower G.I. bleeding.[1] The overall mortality from massive lower G.I. hemorrhage at least equals and probably exceeds that of upper G.I. hemorrhage, which is 8-10%. This is related in part to the older age of the patients, many of whom have associated health problems such as hypertension, atherosclerosis, and degenerative disorders.[2]

Although the clinical history is often nondiagnostic, it will provide valuable information in about ⅓ of patients. Hematemesis strongly suggests bleeding above the ligament of Treitz. However, hematemesis may be due to lesions in the more distal small bowel. Absence of hematemesis does not eliminate the upper G.I. tract as a source of blood loss, because massive bleeding from duodenal ulcer presents frequently with melena and occasionally with passage of blood and clots per rectum. Melena usually means bleeding is from a site above the ileocecal valve and is related to the effects of digestive processes on intraluminal blood. Only 50 c.c.'s of blood is necessary to produce this sign, and following the cessation of a bleeding of 1,000 c.c.'s, the finding may persist for as long as 5 days.[3] With stasis of blood in the right colon, bleeding lesions in that area may present with melena.

Immediate and rapid examination of the patient provides the best means of quickly assessing blood loss. As a general rule, blood pressure of less than 100 mm Hg or a pulse rate greater than 100 beats per minute, in an otherwise normotensive patient, indicates a 20% blood volume depletion. Associated pallor and/or postural hypotension lend support to this estimate. Especially significant may be the loss of pink coloration in the palmar creases of the extended hand. An increase of pulse rate of 20 beats per minute or a decrease of blood pressure greater than 10 mm Hg with postural changes further suggest acute blood loss in excess of 1,000 c.c.'s. These measurements should be made at frequent intervals and sequential changes noted on a flow sheet at the patient's bedside.

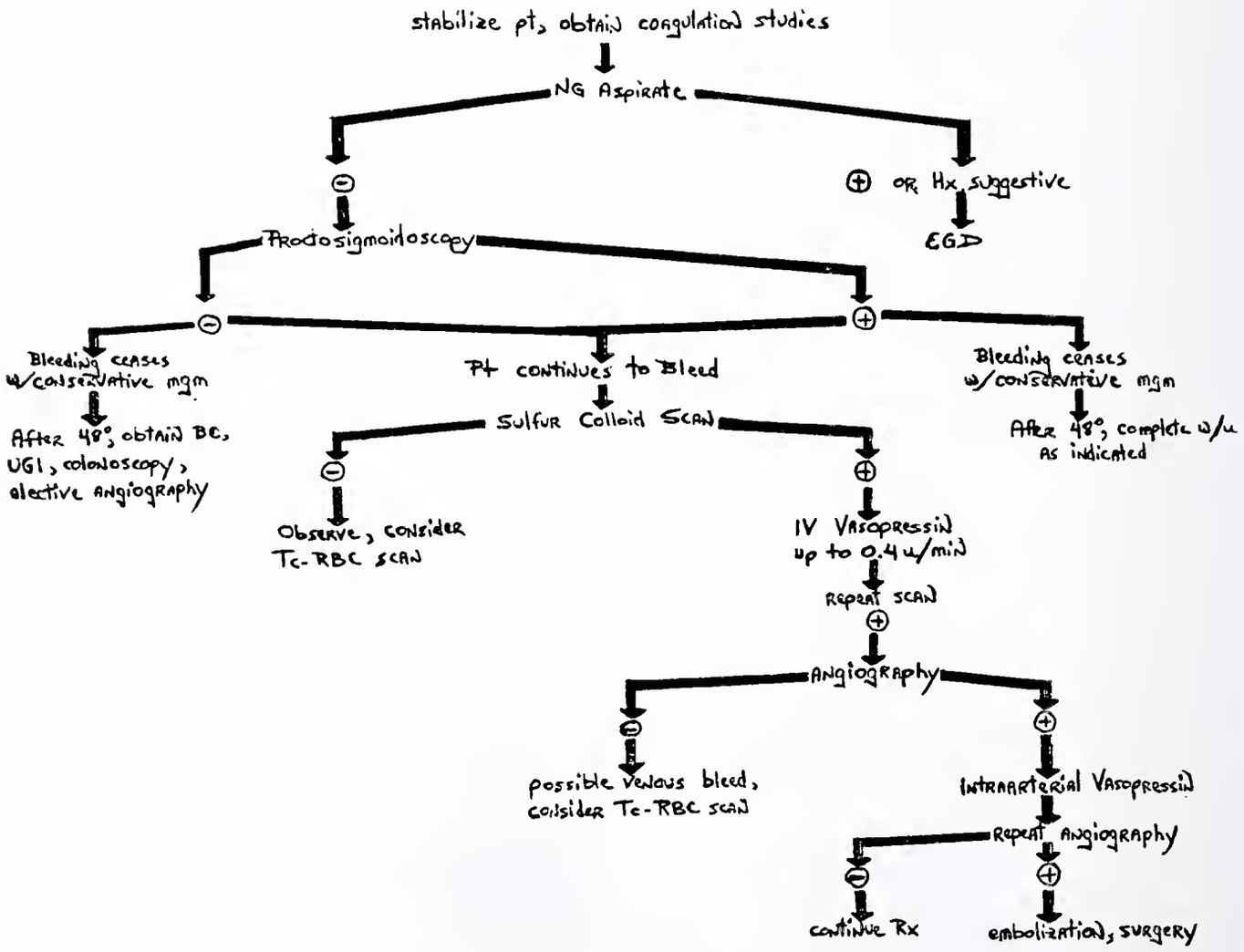
Immediate lab evaluation may further assist in estimation of blood loss. In all cases, a nasogastric tube should be inserted to assess the presence of gross blood and Guaiac tests performed on gastric contents. A rectal exam must also be performed. A hemoglobin of less than 11 gm% and a BUN greater than 40 mg% in an otherwise normal patient indicate an acute blood loss of greater than 1,000 c.c.'s. Cessation of bleeding is accompanied by a rapid fall of the BUN to normal within 2-3 days.

Although not recognized as a source of bleeding until 1955, diverticulosis is now reported to be the most common cause of massive rectal bleeding. Over 75% of the time, this bleeding arises from the right colon.[4] This predisposition may be related to the wider necks of these right-sided diverticula that might allow greater exposure to entry from within the colonic lumen. Diverticulosis is rarely found in individuals less than 30 years of age, but is found in 8% of the adult population and approximately ⅓ of the population over 60 years of age. There is an intimate association of colonic vasculature with diverticula which probably accounts for the frequent cause of rectal bleeding. It appears that major bleeding results from rupture of a vasa rectum and that

*Department of Medicine, Division of Gastroenterology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.

neither inflammation or ulcers play a primary role. Severe life-threatening hemorrhage has been reported in 3-5% of patients with diverticulosis. Diverticular bleeding is almost always recognized as massive rectal bleeding and frequently is associated with signs and/or symptoms of hypotension. The patient usually complains of having suddenly passed bright red blood and/or clots per rectum. Patients usually have no pain except for an occasional mild abdominal cramp. Bleeding usually subsides spontaneously in 80% of cases. About 25% of patients rebleed after a single documented episode, whereas 50% of patients that have had a second bleed will rebleed again. Most diverticular bleeding can be managed conservatively, and operation is reserved for persistent and recurrent bleeding.[5] If angiography reveals bleeding from a diverticulum and bleeding persists, recurs, after intra-arterial infusion of Vasopressin, segmental colectomy is performed. Barium enema will at times result in cessation of bleeding diverticulosis.[6]

Angiodysplasia are localized vascular lesions consisting of small foci of ectatic veins or capillaries within the submucosa of the intestine, which occur predominantly in the cecum and ascending colon. Angiodysplasia are acquired rather than congenital lesions, are usually multiple, and are a frequent cause of lower G.I. bleeding in the elderly.[7] Clinically significant G.I. hemorrhage usually occurs in patients between 40 and 85 years of age. Patients with angiodysplasia usually have more frequent bleeding episodes than patients with diverticulosis, but those patients with diverticulosis usually have more massive bleeding.[5] Many patients will have a history of multiple bleeding episodes with many negative barium studies. The diagnosis should be considered in all cases of obscure G.I. hemorrhage —especially when there is no history of hematemesis, gastric aspirates are negative, and when early EGD reveals no bleeding site. Because the lesions are not readily seen grossly on the mucosal surface, mesenteric angiography may be required for diagnosis. Since the natural history of angiodysplasia is one of recurrent bleeding, some



authors suggest that all patients who have bled and have angiodysplasia should have a right hemicolectomy which has a success rate of 80-90%.

Mesenteric varices is a rare, acquired form of vascular malformation that can present with massive lower G.I. bleeding. Bleeding intestinal varices should be considered in every patient with known liver disease and suspected portal hypertension who has lower G.I. bleeding. Mesenteric varices may also complicate superior mesenteric venous obstruction or thrombosis. The diagnosis may be obtained by proctosigmoidoscopy, colonoscopy, barium enema, or nuclear scanning techniques, but the essential diagnostic test is selective mesenteric angiography which outlines the varices during the venous phase. One should not expect to see contrast material extravasate into the bowel lumen since the concentration at the venous level is too dilute for visualization within the gut.

Medical management is indicated initially and should employ the use of Vasopressin infusion early, since no tamponade techniques are available. Bleeding from intestinal varices that is severe enough to require operation should be treated by a portasystemic shunt.[8]

Small bowel bleeding may present with obstructive symptoms from intussuception or luminal encroachment by a mass lesion. Acute severe bleeding is very uncommon from inflammatory bowel disease. You must be suspicious of small bowel tumor, both benigh, such as hemagiomas, leiomyomas, and malignant tumors, such as adenocarcinoma, lymphoma, lymphosarcomas, leiomyosarcomas and metastatic disease. Peptic disease in Meckel's diverticulum may bleed when ectopic gastric mucosa is present (—50% of the time). In such cases, bleeding may be in particular malignant melena, breast carcinoma and lung carcinoma preceded by ulcer-like pain located in the periumbilical or right lower quadrant areas. In small bowel bleeding, NG aspirate is negative and EGD is usually ineffective beyond the ligament of Treitz.

Carcinoma of the left colon remains one of the most common causes for gross rectal bleeding of mild to moderate degree. Hemorrhoids per se are not considered an adequate explanation of rectal bleeding unless they are actively bleeding.

One of the most frustrating diagnostic exercises clinicians face is determining the site of massive lower G.I. bleeding. The complete work-up can and should be completed within 4-6 hours. Initial stabilization of blood volume and immediate resuscitative measures should be used for lower G.I. tract bleeding. Upper G.I. tract lesions should be excluded by nasogastric intubation and EGD if the history or NG aspirates suggest an upper G.I. tract source. Proctosigmoidoscopy should be done to exclude mucosal disease, hemorrhoidal bleeding, or local carcinoma, and coagulation studies should be drawn.

Colonoscopy results in those patients with occult rectal bleed and in those patients with gross rectal bleeding who are not actively bleeding at the time of colonoscopy, are impressive—there is a 38% incidence of finding significant lesions in that group of patients who had had normal barium enema and proctosigmoidoscopy.[9] Some authors have also had success with colonscopy in patients with active rectal bleeding.[10] But, in general, colonoscopy in a patient with active rectal bleeding is ineffective because of the technical risk and mechanical difficulties in clearing the colon of clots.[11] However, in those patients with gastrointestinal bleeding that avoids detection despite an exhaustive search, intraoperative endoscopy appears to be of value.[12]

Selective mesenteric angiography has become an essential method in the evaluation of acute, massive hemorrhage from the lower G.I. tract since its introduction by Nusbaum and colleagues in 1965. Angiography is most effective in acute arterial bleeds. Catheterization of the superior mesenteric artery, inferior mesenteric artery, and celiac artery is performed. In order to show the extravasation of contrast material into the lumen, the rate of bleeding has to be greater than 0.5 c.c.'s per minute. In those patients being evaluated for occult blood loss, angiography should be performed after the barium studies and endoscopy. 45% of these patients with bleeding not diagnosed with endoscopy, barium studies, are diagnosed with angiography. Almost 50% of these lesions are angiodysplasia—of these, 50% are located in the cecum and ascending colon. The limitations of angiography are that it is invasive and cannot be repeated at frequent intervals. Therefore, it might not be performed at the time of active bleeding. It is also time-consuming and carries significant complications; arteriosclerosis may preclude arterial catheterization. In patients with venous bleeding, angiography is often unsuccessful, nor can it be used if a barium examination has been done recently.[13]

In 1970, the first scanning demonstrations of Meckel's diverticulum using technetium 99m pertechnetate was performed. In addition to the technetium 99m pertechnetate, technetium 99m sulfur colloid may be useful for the localization of sites of active gastrointestinal bleeding. After injection of the nuclide, the sulfur colloid is rapidly extracted by the liver, spleen, and bone marrow, thus decreasing the background image. Any focal areas of increased uptake noted elsewhere in the abdomen 10 minutes after injection are indicative of an actively bleeding site.[14] With the sulfur colloid scan, a bleeding rate as low as 0.05-0.1 c.c.'s per minute can be directly observed in the gastrointestinal tract. This scan is particularly helpful in localizing bleeding sites from venous sources and lesions located between the ligament of Treitz and sigmoid colon. In one study, only 50% of patients with positive scans had positive angiograms for bleeding, and the authors suggested that the ^{99m}Tc-Sulfur-Colloid scan may be the technique of choice in patients with lower gastrointestinal bleeding. The advantages as a screening technique are that it's noninvasive, low cost, has a high sensitivity, and the procedure can be repeated easily. The disadvantages are that bleeding in the upper G.I. tract is difficult to detect because of isotope accumulation in the liver, spleen, and bone marrow, anatomical localization within the small bowel is not possible, and the patient must be actively bleeding at the time of the isotope injection.

Scanning with ^{99m}Tc-labelled blood pool products such as albumin or red blood cells may be preferable in those patients with intermittent G.I. hemorrhage or continuous G.I. hemorrhage since extravasation of radioactive blood into the digestive tract will eventually demonstrate a recognizable part of the anatomy. Blood pool agents can localize hemorrhage from the entire G.I. tract and are often sufficient to guide the surgeons.[13] The red blood cells are labelled in vivo and images are taken at 5-minute intervals for 30 minutes and at 1 hour and 2 hours post-injection. Delayed scans are obtained on those patients with normal 2-hour images—either when the patient's clinical signs indicated renewed bleeding—or at 24 hours after initial tracer injection. ^{99m}Tc-labelled red blood cells can provide an effective diagnostic tool in the management of patients with intermittent gastrointestinal hemorrhage – especially in patients with lower G.I. bleeding. It can be particularly useful when the indications of continued active hemorrhage are equivocal.

The advances made in the localization of bleeding sites with angiography, endoscopy, and nuclear medicine procedures have resulted in improvement in the conservative management of patients. Surgery is used as a last resort when these measures fail to stop the bleeding. Mortality from operations in the treatment of acute lower G.I. tract bleeding ranges from 8-12%.[6]

Intravascular therapy for gastrointestinal arterial bleeding was first reported 10 years ago with selective visceral intra-arterial infusion of vasoconstrictor agents. Vasoconstrictor therapy acts by reducing blood flow in actively hemorrhaging vessels, thereby increasing the probability of stable clot formation. Thus, a prerequisite for successful vasoconstrictor therapy is an adequate clotting mechanism.[15] Because clotting derangements may develop later as a result of inadequate replacement of clotting factors and platelets during massive transfusions, some authors recommend giving the patient one 10 c.c. amp of calcium gluconate (1 gm) and one unit of fresh frozen plasma after every 6 units of packed red blood cells or whole blood transfusions. Vasoactive agents used clinically for arteriocapillary bleeding have been primarily Vasopressin and epinephrine. Epinephrine causes potent vasoconstriction via adrenergic smooth muscle receptors, but it may produce undesirable post-infusion reactive hyperflow. It is often combined with propanolol during superior mesenteric infusion to potentiate the alpha effect. In view of potential complications of propanolol and the inherent disadvantages of epinephrine, widespread infusions of this agent are discouraged. Animal studies using prostaglandins suggest that prostaglandin $F_2\alpha$ has excellent potential as a vasoconstrictor in G.I. hemorrhage. It appears to be equally effective as Vasopressin as a mesenteric vasoconstrictor, but because it is rapidly removed from circulation there is a marked decrease in systemic effects.[16] However, intra-arterial Vasopressin remains the drug of choice in arterial as well as venous bleeding.

Vasopressin is a polypeptide hormone extracted from the posterior pituitary gland and is a potent peripheral vasoconstrictor which acts directly on smooth muscle. It was first introduced in 1956 and was used in large doses that produce serious

cardiac side effects and tachyphylaxis. Infusion of Vasopressin produces a significant and sustained reduction of spanchnic blood flow and does not exhibit reactive vasodilatation.

After bleeding has been demonstrated on a baseline angiogram and a catheter optimally positioned, Vasopressin is infused for approximately 20 minutes in a dosage of 0.2 units per minute. At this point, a repeat angiogram is performed and the dosage of Vasopressin adjusted according to the results. If this dose of Vasopressin is successful, then the infusion is continued for 24-36 hours and then halved and continued for another 24 hours. If by clinical criteria all hemorrhage has ceased, the catheter is kept in for an additional 8-12 hours and then withdrawn. If extravasation persists, the rate is increased to 0.4 units per minute and the angiogram is again repeated in 20 minutes. If this dose is successful in controlling bleeding, it is maintained for 12-24 hours and then tapered over the next 2-3 days. Any evidence of continued extravasation at a dose of 0.4 units per minute is an indication for discontinuing the infusion, and some other form of therapy should be employed.

Intravenous infusion of Vasopressin at the same rates as those used in the superior mesenteric artery are equally effective in controlling variceal bleeding, and low-dose systemic Vasopressin has become standard first-line therapy for variceal bleeding in many centers. Animal experiments have shown that selective intra-arterial Vasopressin infusions produce no significant increase in mesenteric vasoconstriction when compared to intravenous administration at the same dose level. But there is also some evidence that peripheral Vasopressin infusions may actually result in an absolute increase in visceral blood flow in hypotensive animals.[17]

Because of the intrinsic speed of institution and simpler application, it is suggested that intravenous Vasopressin be instituted first in the therapy of gastrointestinal hemorrhage.[18] Before the development of the ^{99m}Tc-Sulfur-Colloid scanning technique, monitoring the effectiveness of intravenous Vasopressin infusion was extremely difficult. Clinical criteria may be used, but they may be misleading. If the screening ^{99m}Tc-Sulfur-Colloid scan is negative, then no further studies are recommended and the patient is managed conservatively. If the screening sulfur colloid scan is positive, an initial trial of intravenous Vasopressin is given and approximately one hour later, the patient is rescanned to evaluate the effect. If the repeat scan is negative, then the present therapy is continued. If bleeding persists, then angiograms are performed to administer the agent intra-arterially.

Potential success with Vasopressin infusion depends largely on the etiology and location of the bleeding. Most causes of both upper and lower gastrointestinal tract bleeding frequently respond to Vasopressin infusion. Bleeding secondary to Mallory-Weiss syndrome, hemorrhagic gastritis, colonic diverticulosis, angiodysplasia of the colon, and mucosal tears usually respond to Vasopressin infusion. It is less effective in treating bleeding peptic ulcers, neoplastic bleeding, or bleeding when clotting abnormalities exist.

Complications associated with Vasopressin infusion are infrequent and usually not serious. Ischemic complications are rare, but can be serious. Other side effects include a decrease in cardiac output, probably secondary to a decrease in coronary artery blood flow, and cardiac arrhythmias. Hypertension and bradycardia are especially common if Vasopressin is used selectively in a vessel supplying part of the blood supply to the adrenal gland and should respond to a decrease in the infusion rate. Systemic antidiuretic hormone effect may cause water retention and hyponatremia in approximately 10% of patients and can be managed by careful monitoring of fluid, electrolytes, and parenteral diuretics. Minor abdominal cramping and diarrhea may be secondary to the direct effect of Vasopressin on the smooth muscle of the gastrointestinal tract.[15]

Selective transcatheter occlusion of a bleeding vessel is a more recent alternate therapeutic approach in selected cases of G.I. bleeding. By occluding the primary bleeding vessel, it is hoped that the perfusion pressure and flow rate will be lowered to allow clotting.

Several methods of selective arterial occlusion for gastrointestinal bleeding have been described —including embolization, balloon catheter occlusion, transcatheter electrocoagulation. The most common method used is embolization. The type of material used is influenced by the etiology of the bleeding. The most common material used are autologous blood clot, which often provides adequate temporary occlusion for benign gastrointestinal bleeding, and Gelfoam, which provides a more permanent vascular occlusion such as for a

bleeding gastrointestinal tumor. After embolization, angiograms are performed for re-evaluation. If bleeding persists, further embolization may be attempted. Angiograms should follow each stage of embolization to determine if bleeding has been controlled and to assess regional collateral flow around the ambolized vessels.

Consideration for arterial occlusion for gastrointestinal bleeding is greatest in patients in whom vasoconstrictor therapy fails, with bleeding entities such as peptic ulcer disease and neoplastic bleeding known not to respond to intra-arterial Vasopressin, with focal bleeding in patients with clotting disorders, and in patients who are poor surgical candidates. In one study, a bleeding control rate of 92.7% was obtained with a procedure-related mortality of 3.6% with 80% of all patients leaving the hospital.[19] The overall collective mortality for emergency surgery in bleeding diverticular disease and in upper gastrointestinal bleeding is the same, at approximately 30%. But, vaso-occlusion is not innocuous, with the most serious complications being ischemic changes. Gastric and small bowel necrosis have occurred. Pre-existing compromising factors such as arteriosclerosis, previous surgery, or previous prolonged Vasopressin infusion represent relative contraindications to therapeutic embolization.

Some authors suggest that the transcatheter therapeutic embolization for arterial bleeding in experienced hands is safer, more effective, and less expensive than surgical alternatives.

If the patient is stable and *not* actively bleeding, he should be observed. No barium studies should be done for at least 24 hours. If after 48 hours the patient has remained stable and the site of bleeding remains unknown, routine gastrointestinal studies are started—including barium enema, upper G.I., colonoscopy, and elective angiography in that order.

SUMMARY

In summary, despite major advances in the diagnosis and management of upper G.I. bleeding, massive lower G.I. bleeding still remains a challenging and difficult problem. The overall mortality of massive lower G.I. bleeding is approximately 8 to 10 percent and is related, in part, to the older age of the patients, many of whom have associated health problems such as hypertension, atherosclerosis and degenerative disorders. The successful management with acute lower G.I. bleeding depends on the accurate localization of the site of hemorrhage. Approximately 5 percent of all cases are never diagnosed.

After the patient is stabilized, upper G.I. tract lesions should be excluded by nasal-gastric intubation and EGD if the history or NGS would suggest an upper G.I. tract source. Proctosigmoidoscopy should be done to exclude mucosal disease, hemorrhoidal bleeding, or local carcinoma, and coagulation studies should be drawn.

If by clinical criteria the patient continues to bleed, then a screening ^{99m}Tc-Sulfur-colloid Scan should be done. If this is negative, then no further studies are recommended and the patient is treated conservatively. If after 48 hours the patient has remained stable, then routine G.I. studies are started – including barium enema, upper G.I. with small bowel enema, colonoscopy and elective angiography in that order.

If the screening scan is positive, then intravenous Vasopressin is begun at 0.2 units per minute. Bleeding secondary to Mallory-Weiss syndrome, hemorrhagic gastritis, colonic diverticulosis, angiodysplasia of the colon, and mucosal tears will usually respond to this therapy. A repeat sulfur colloid scan is obtained in one hour and if bleeding persists, the dose is increased to 0.4 units per minute. If bleeding persists at this dose of Vasopressin, then angiograms are performed to determine the exact site of bleeding and to administer the Vasopressin intra-arterially. Considerations for arterial embolization include patients in whom vasoconstrictor therapy fails, patients with bleeding peptic ulcer disease, neoplastic bleeding, focal bleeding in patients with clotting disorders, and in patients who are poor surgical candidates.

In those patients with intermittent G.I. bleeding in whom the sulfur colloid scans and angiography are negative, ^{99m}Tc-labeled red blood cells should be considered and may be helpful.

In the treatment of lower G.I. bleeding, surgery has an overall mortality of 8-12 percent and is used as a last resort in those patients who continue to bleed, 4 to 6 units a day in spite of conservative management.

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The Rigid Ureteropyeloscope: Description and Applications

Barre F. Finan, M.D., and Curry B. Bradburn, Jr., M.D.*

INTRODUCTION

The techniques of transurethral ureteroscopy and pyeloscopy have added new dimensions to the evaluation of the upper urinary tract. Transurethral examination of the ureter with both standard cystoscopic and pediatric cystoscopic equipment has been described.[1,2] However, until recently the capability to examine beyond the distal ureter and to perform the necessary manipulations was absent. With the introduction of the 11.5 French and 12.0 French rigid ureteropyeloscope, evaluation of the entire upper urinary system is possible. Furthermore, the working channel and available instrumentation allows operative intervention in these areas.

INSTRUMENTATION

The rigid ureteropyeloscope is produced by several companies with sizes available ranging from 10.5 French to 12.0 French. The smaller sheath allows for only visualization while a larger diameter provides for the passage of interventional accessories through a 5 French working channel. A 2.7 millimeter lens of both 5 degree and 70 degree angles are available. Accessory instruments include needle electrodes, flexible biopsy forceps, stone baskets, endoscopic scissors and an ultrasonic probe.

In order to pass the instrument into the ureter, the intramural ureter must be dilated. This dilatation may be accomplished by several methods. With the aid of a standard cystoscope, metal probes may be used to progressively increase the intramural ureters to a 16 French diameter. Similarly, a guidewire may be passed into the upper urinary system and progressively larger dilators passed over the guide-wire. Recently angioplasty catheters have been used successfully and with less trauma. During dilatation the orifices are left anatomically intact and the mechanism contributing to the prevention of reflux is not disturbed.[3] Following adequate dilatation, the ureteroscope is passed into the ureter under direct vision easily over a guide-wire. Satisfactory passage of this instrument is possible in over 90% of patients. Failure to pass the instrument occurs most often in men. This fact is attributed to the angle between the prostatic urethra and the intramural ureter making passage of a rigid instrument difficult. Other factors detrimental to passage include previous surgery, inability to dilate the ureteral orifice satisfactorily and bladder diverticuli.

APPLICATIONS

Evaluation of the upper urinary tract has been confined to radiographic studies and surgical intervention. Excretory urography, retrograde pyelography, computerized tomography, and ultrasonography have provided physicians with a large volume of information. However, even with these studies, occasionally inadequate and misleading information is obtained. For example, small ureteral tumors may escape detection and calculi may be mistakenly identified as tumors. Direct visualization of the entire collecting system will provide for a more accurate and complete evaluation of both unexplained filling defects and hematuria.

Not only can an accurate diagnosis be made but also intervention accomplished. Transitional cell carcinoma of the upper urinary tract has been diagnosed through cytological studies. Brushings of an abnormal-appearing ureter can be carried out under fluoroscopic control. With direct visualization of an abnormal area proper diagnosis may be made more accurately and local treatment carried out. Historically transitional cell carci-

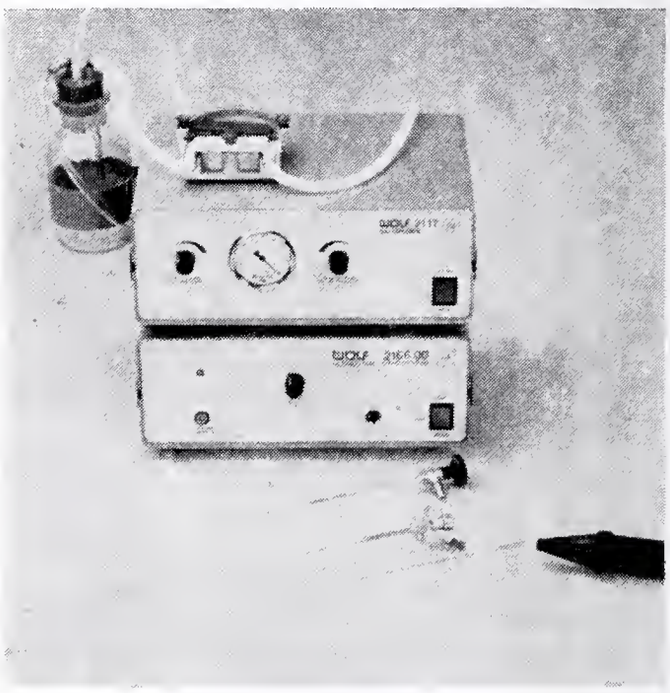


Figure 1.

The ultrasonic generator with suction apparatus is pictured. The 5 degree lens, 12.5 French sheath and ultrasonic probe as shown allow for access to and removal of the majority of calculi.

*Little Rock Urology Clinic, P.A., 200 Doctors Park, 9600 Kanis Road, Little Rock, Arkansas 72205.

noma of the upper urinary tract have been treated by radical nephroureterectomy. This surgical procedure has been necessary due to the inability to accurately stage and provide local treatment of these tumors. Now, with direct visualization, local tumors may be treated and reevaluated regularly as is accomplished with bladder tumors.

Stone basket manipulation has been confined to the distal ureter due to the high incidence of ureteral injury if practiced beyond the level of the iliac vessels. With direct visualization manipulation can be accomplished throughout the entire collecting system. Calculi, even in the renal pelvis, can be approached through ureteroscopy. Furthermore, the addition of the ultrasonic probe allows for stone fragmentation of larger calculi to facilitate basket removal or spontaneous passage. Blind stone basket manipulation carries a failure rate of 30 to 40% even when confined to the distal ureter.[4] This can be markedly decreased with the use of the rigid ureteroscope.[5] Furthermore, direct visualization can decrease the complication of blind stone basket retrieval, i.e., ureteral perforation and ureteral eversion.

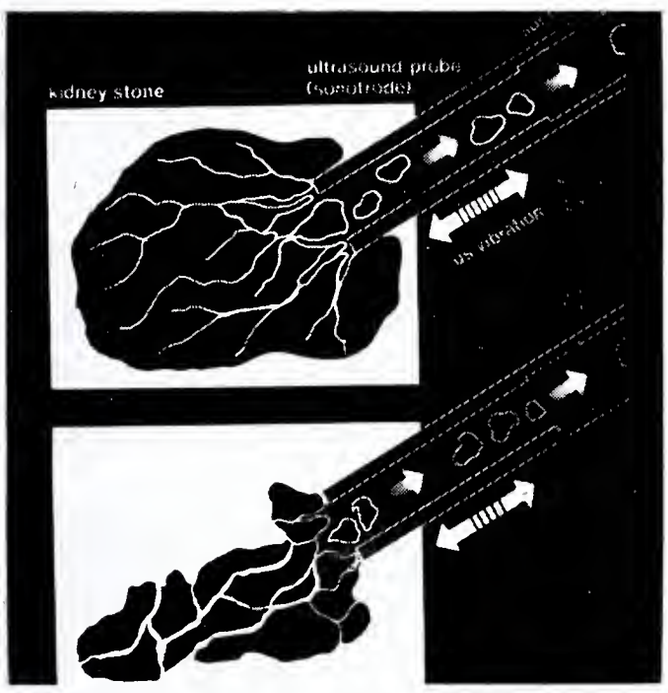


Figure 2.

The ultrasonic probe occupies the outer rim while the inner channel allows for suction removal of stone fragments.

CONCLUSION

The introduction of the rigid ureteropyeloscope has dramatically aided in the diagnosis and treatment of the upper urinary tract system. Hopefully, with increased familiarity with this instrumentation, the need for both open and radical surgery can be decreased. Furthermore, even the need for percutaneous removal of calculi may be avoided with the proper use of the rigid ureteropyeloscope. Certainly this new addition to the urologic armamentarium will aid the urologist in evaluation and treatment of a large number of both diagnostic and therapeutic problems.

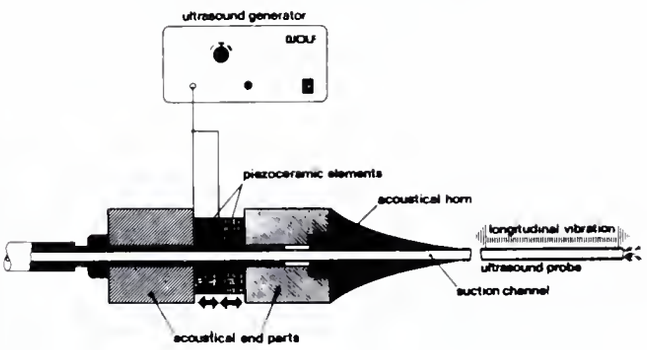


Figure 3.

The working elements of the ultrasonic probe and suction are pictured in longitudinal section.

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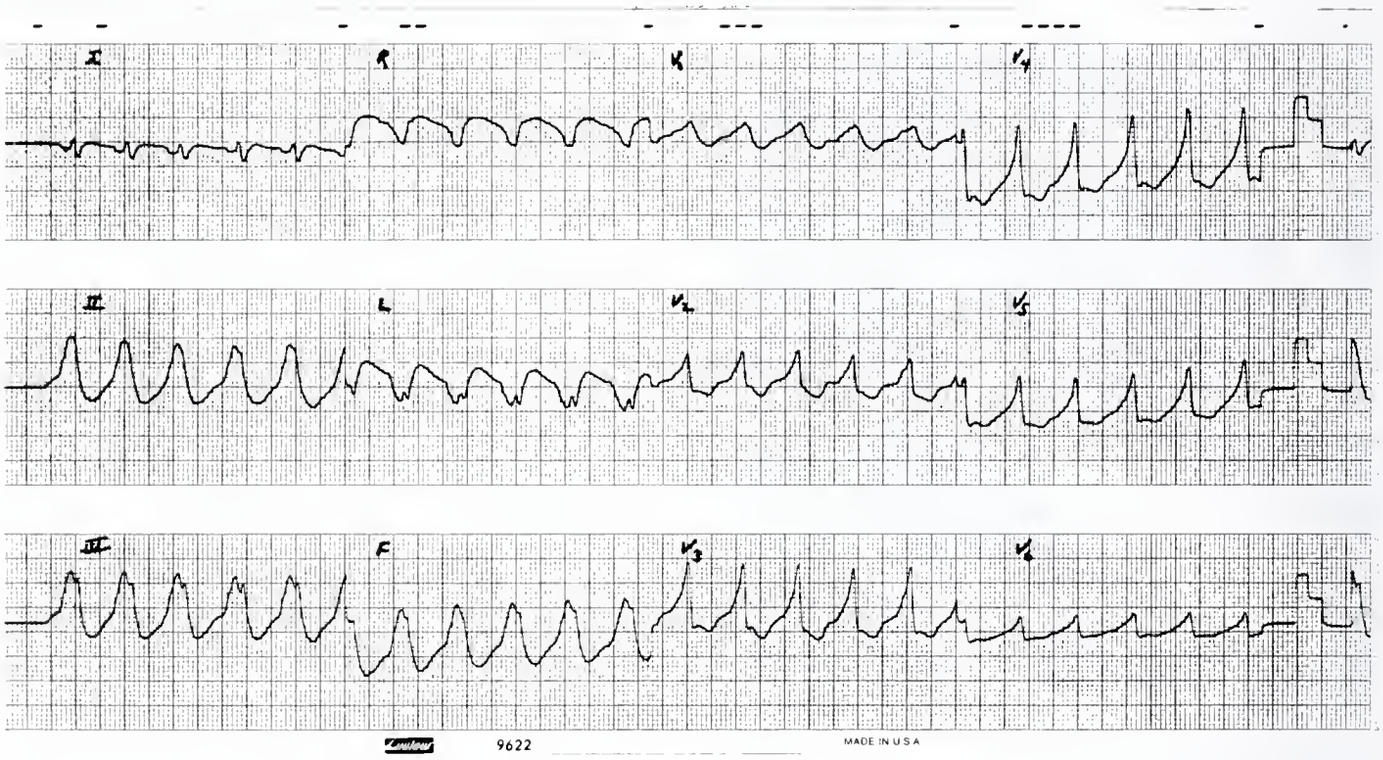
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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 159)

HISTORY: P. K. is a 49-year-old male who has presented to the hospital because of palpitations. He has strong past history to suggest ischemic heart disease. On physical examination, he is noted to be anxious, pale, and hypotensive. What do you make of his ECG?



John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

Lumbar Spinal Stenosis

Philip H. Johnson, M.D.*

Low back pain originating from the lumbar intervertebral disc may present itself as three different syndromes or any combination of these three. First, "internal disc disruption" where pain originates from the injured and deteriorating disc. Secondly, the "herniated nucleus pulposus" with its characteristic low back and radicular leg pain. Finally from "spinal stenosis" producing lumbar nerve root entrapment. Previous papers[8,9] have dealt with the first two of these disc syndromes. This paper will deal more specifically with lumbar spinal stenosis.

Porter et al.[12] has chosen to refer to this subject as "lumbar root entrapment syndrome". In the strictest sense an impingement actually occurs as the nerve root traverses the spinal canal and exits the spinal foramen. Crock[2] has chosen to call this syndrome "isolated lumbar disc resorption" because it is thought that disc degeneration and narrowing sets in progress changes in the facet joints and posterior elements which culminate in nerve root encroachment. Schneck[14] uses the term "lumbar arthrosis" to designate the changes which occur about the spinal canal, pointing out that at least one-third of the cases of spinal stenosis exhibit normal disc height. "Dynamic stenosis" is a term applied to patients in early stages whose symptoms are produced with increasing severity by extension and external rotation of the spine.

Lumbar spinal stenosis is therefore a degenerative aging process occurring in the lower lumbar spine that produces narrowing of the spinal canal and relative restriction to the normal egress of nerve roots. Other diseases produce spinal canal and foramen constriction, such as Paget's disease, chondroepiphyseal dysplasia (achondroplasia), spinal fracture, spondylolisthesis, and postoperative spinal fusion. Though the anatomic changes are similar, the subject of this paper is spontaneous degenerative spinal stenosis.

Clinical

The age of onset of this process, as might be expected, is later than any of the other disc syndromes. The patient is over forty years of age and usually is in the fifties or sixties. Younger patients can be involved, when they have undergone previous back surgery. Most patients will

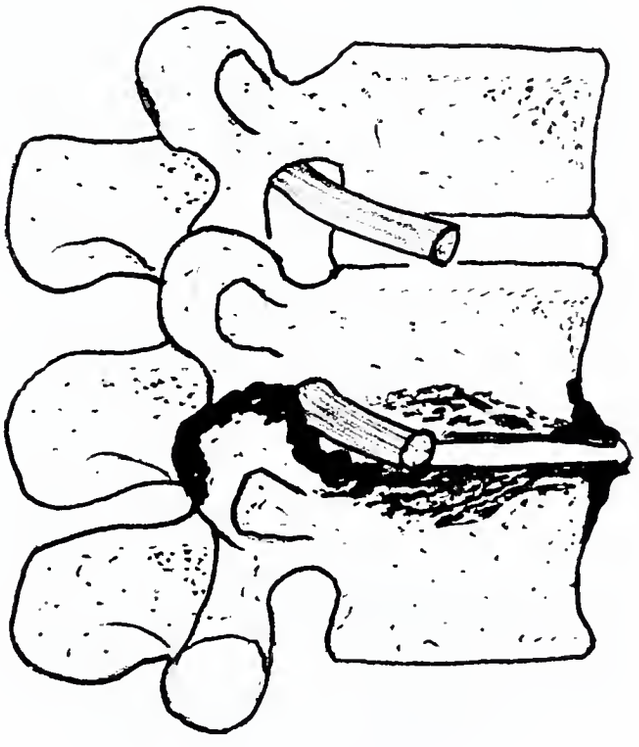


FIG. 1

*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

have had low back pain and symptoms of instability for many years. They may have even had recurrent bouts of sciatica in the past.

Spinal stenosis produces a characteristic pattern of low back and leg pain. The pain in the leg is the most typical and has been referred to as "pseudoclaudication". This spinal claudication needs to be differentiated from the claudication of vascular insufficiency. Both types manifest as leg pain brought on by walking and relieved by rest. The claudication of spinal stenosis is brought on by prolonged standing or walking and relieved by sitting with the spine in the flexed position. Any exercise of the legs with the back in a flexed position, as in cycling, is painless. The leg pain is radicular in nature usually associated with numbness and tingling in the calf and foot.

Early in the dynamic stage of the disease process, nerve root pain is thought to be due to venous obstruction[2] and/or decrease in the amount of arterial blood supply to the nerve roots.[6] During this stage, straight leg raising is negative and there is no evidence of reflex change, sensory abnormality or muscle weakness. Later in the process, when definite nerve root entrapment occurs from bony and/or soft tissue compression, leg pain is due to direct nerve injury. But even then, straight leg raising is only rarely positive and other nerve root signs are conspicuously absent. In this stage the leg pain is more constant and frequently present at night. Patients often give a history of walking at night to relieve pain. Range of motion in the spine in these older patients, as might be expected, is restricted.

Despite the fact that the neurologic examination of the lower extremities is usually normal, Gill[6] recommends two tests to diagnose the incipient case. The first is referred to as the "jack-knife test". The patient is asked to sit with his legs extended on the examining table and flex forward as far as possible and hold this position for two minutes. This test will frequently bring out muscle weakness, reflex change and sensory abnormality. The second test is the so-called "walk test". After an initial neurologic examination, the patient is asked to walk briskly for up to one-half mile and is then reexamined. Frequently, muscle weakness or reflex change will then be evident.

Anatomy

A sound working knowledge of the anatomy of the spinal canal is necessary for a clear understanding of these progressive changes. All lumbar and sacral nerve roots which will emerge at their respective levels traverse the lumbar spinal canal. This bony canal is ring-shaped and made up of the vertebral body anteriorly and the laminae posteriorly. The lateral walls are produced by the pedicles and facets. In the upper lumbar spine, the facets are oriented sagittally. In the lower lumbar spine, these synovial joints are oriented obliquely and with hypertrophy can narrow the diameter of the canal. The superior facet is usually larger than the inferior facet and projects upward toward the foramen (intervertebral canal). Though this canal passes the nerve root making its way under each pedicle. The dorsal root ganglion produces a fusiform swelling in or near each foramen, depending on the level. Figure 1 shows the normal anatomy in the upper segment and the aging bony architecture below.

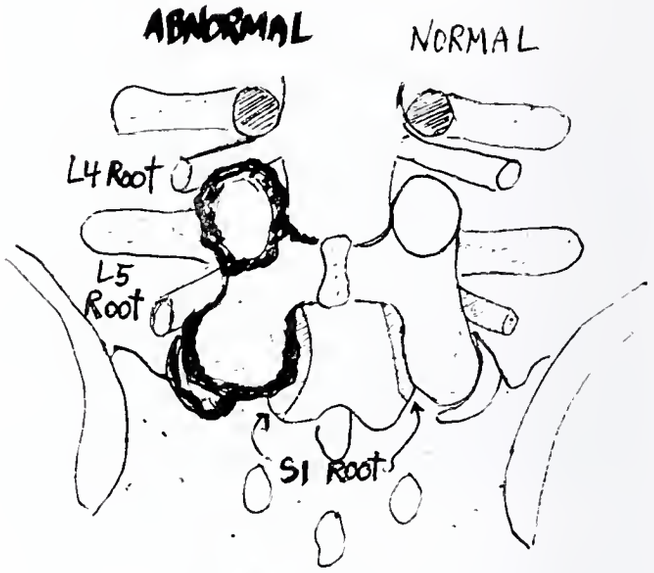


FIG. 2

History and Pathogenesis

Verbiest[15] was the first to publish a clear definition of this interesting syndrome. In 1954, he reported on seven patients complaining of leg pain and weakness after walking and standing. He compared similarities of these cases with the claudication of vascular insufficiency. In all seven cases lipiodol myelography showed mechanical blocks. At laminectomy is was necessary to remove the medial part of the articular facets to relieve the obstruction. He clearly and accurately documented the abnormality as encroachment of the articular processes on the spinal canal. He felt that this was a developmental narrowing of

the lumbar vertebral canal with aging. In later papers[16] detailed measurements of the AP diameter of the canal and the interpedicular distance were documented. He also pointed out that a very small disc protrusion into a narrow spinal canal can produce significant neural compression.

Farfan[3,4] has emphasized the importance of the "three joint complex" in the pathogenesis of this process. The intervertebral disc and the two posterior facets act in concert in normal spinal motion and are similarly involved in aging changes. In the intervertebral disc water absorption, longitudinal and radial tear, internal disc disruption with loss of disc height and instability produce secondary changes in the posterior facet joints. These are synovial joints and hypertrophic osteoarthritis occurs similar to other weight bearing joints. There is cartilage destruction, osteophyte formation, joint laxity and subluxation. Periosteal new bone formation produces an increase in the diameter of the facets and osteophytes project superiorly into the neural foramen and anteriorly and medially into the spinal canal.

Kirkaldy-Willis[10] in many publications has pointed out graphically the degenerative changes which occur in the "three joint complex" as well as the stenotic changes which occur in the spinal canal and its foramina. This process usually begins at the L4-5 joint complex and extends proximally and distally so that in late stages multilevel spinal stenosis is produced. A particularly well illustrated article in 1978[11] presents photographs taken on autopsy dissections of 50 lumbar spines which show the hypertrophic and stenotic changes. Burton[1] has pointed out the prevalence of spinal stenosis among patients with disc disease who fail to respond to conventional laminectomies. Figure 2 is a drawing inspired by some of his fine illustrations. It shows, on the right side, a posterior view of normal lumbar anatomy with the posterior elements of L4 removed. The left side shows impingement of the L4 nerve root in the intervertebral foramen and impingement of the S1 nerve root in the spinal canal.

Soft tissue structures may also compromise the spinal canal and neural foramen. Gelderen[5] was the first to describe the role of the hypertrophied ligamentum flavum in spinal stenosis. Recently, Crock[2] has graphically illustrated the encroachment of the neural foramen by a redundant and hypertrophic ligamentum flavum. Obviously a bulging or herniated intervertebral disc may significantly compromise an already constricted canal.

Diagnosis

Spinal stenosis is suggested on plain x-rays by disc space narrowing. Hypertrophic lipping can be seen at the margins of the vertebral body. The facets as seen, on oblique and lateral views, may appear hypertrophic, sclerotic, and exhibit loss of joint space. An actual increase in the size of the pedicles, lamina and facets are caused by periosteal new bone formation.

Myelography characteristically shows multiple "hourglass" deformities. Contrast media is markedly narrowed in the regions of the intervertebral discs and facets and an actual block to the dye column is not rare.

The development of computed tomographic (CT) scanning has brought the understanding of spinal stenosis out of the dark ages and into the age of enlightenment. Our present knowledge of the complexities of spinal stenosis have been made possible with this x-ray technique. This

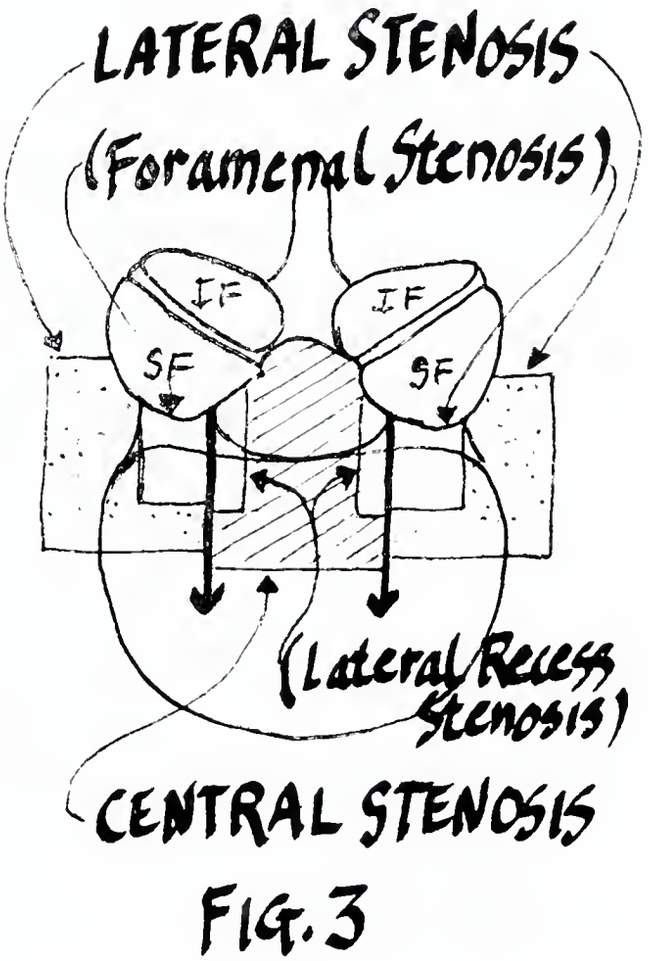


FIG. 3

imaging technique including sagittal reformatting make it possible to see in vivid detail the dimensions of the spinal canal and its contents. Bony and soft tissue impingement can be clearly seen. Complete texts on CT scanning of the spine are available for the radiologist.[13] Hethoff and Ray[7] have written a comprehensive but concise synopsis for the clinician.

Nuclear magnetic resonance (NMR or MRI) techniques, when available, will add a complete new dimension to the understanding of this subject.

Classification

The terminology and definition of spinal stenosis has often been confusing. Figure 3 shows a cross section of the vertebral body looking from below, up to the pedicles. The superior articular facets (SF) are graphically seen, with the inferior facets (IF) extending down from the pars interarticularis. Spinal stenosis is divided into two main locations; central stenosis and lateral stenosis. An imaginary line connecting the medial borders of the pedicles represents the line of division. Anything medial is referred to as central canal stenosis. Anything lateral to this line is considered lateral spinal stenosis.

Central stenosis implies loss of volume in the spinal canal inside the pedicles. Overgrowth of the inferior articular process is responsible for narrowing of the central portion. Also, hypertrophy of the superior articular process in a medial direction produces more constriction. In the most lateral dimension of the central canal lies a gutter, frequently referred to as the lateral recess (or subarticular canal) in which the nerve root lies before it makes its exodus beneath the next lower pedicle. The nerve is tightly bound to this canal and may be compressed by bony hypertrophy and osteophytes of the facet. This is seen on CT scan as a trefoil shaped spinal canal (Fig. 4).

Lateral stenosis implies entrapment of the emerging nerve root in the neural foramen or anywhere further lateral. Foraminal entrapment within the "intervertebral nerve root canal" is frequently produced from below by osteophytes from the superior facet (L4 nerve root, Figure 2). More laterally vertebral body lipping and lateral disc herniation may produce nerve root impingement. Constriction of a nerve root frequently produces a distal poststenotic swelling. The term "far-out stenosis" refers to nerve root impingement along the side of the vertebral body usually from osteophytes. Patients may be suffering from involvement at several areas at the same time.

Treatment

The mainstay of treatment for all discogenic low back pain is conservative. Porter[2] found that 80 percent of the patients elected conservative measures or no treatment at all and only 9.6% of his series of 249 cases were treated by surgical decompression.

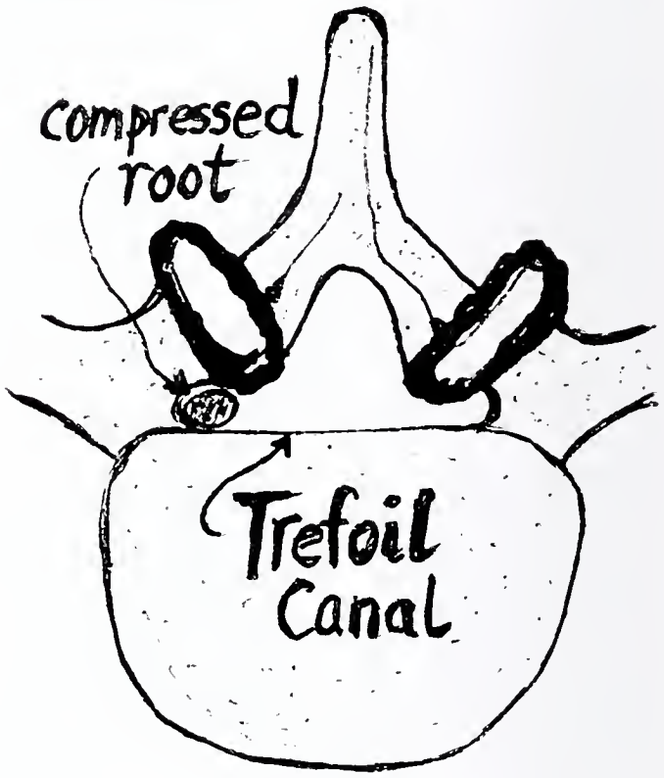


Fig. 4

In the early stages, weight reduction and a flexion-type spinal orthosis may be very effective. Stretching exercises to flatten the lumbosacral spine together with muscle building abdominal exercises are effective over the long term.

Epidural steroid injections have been recommended and may offer significant temporary relief of symptoms.

Later in the course of the disease, when nerve root signs of specific impingement occur, spinal decompression is necessary. Resection of all the facet medial to the pedicle (medial facetectomy) is necessary to relieve the lateral recess. Resection of the entire facet and lamina bilaterally may be necessary. In older patients with marked disc narrowing, sclerosis and osteophytes, instability is

not usually a problem. Simple laminotomies for disc removal are grossly ineffective. Likewise, chemonucleolysis has no place in the treatment of spinal stenosis and is contraindicated.

Summary

Spinal stenosis is the end stage of degenerative disc disease and produces nerve root entrapment. The symptomatology is characteristic and the physical findings are unimpressive. The key to the diagnosis is awareness of this syndrome. The CT scan can provide vivid documentation and, if necessary, a road map for surgical decompression.

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EDITORIAL

Weight Losers and Gainers on Seemingly Identical Diets

Alfred Kahn, Jr., M.D.

Everyone has had the experience of having a friend who can eat a lot but does not gain much weight. Conversely, some friends eat very little and still gain weight. If the human body were nothing but a machine, then energy put in and burned should be the same in every machine—the same amount of heat would be given off; the same amount of energy would be released; the same amount of work would be completed—provided the machines were identical. Humans tend to feel that, on a set number of calories, weight gain or loss is predictable. This is certainly true at the extremes of bulimia and the other end of the spectrum, severe anorexia—there will certainly be weight gain at one end and weight loss at the other. The puzzling problem is why do some people stay thin on a diet on which their equally-active spouses gain weight—or vice versa—and without being at the extremes of high or low calorie intake. There is an interesting Seminar in Medicine of the Beth Israel Hospital in Boston conducted by Jean Himms-Hagen, D.Phil. (New England Journal of Medicine, Volume 311, Page 1549, December 13, 1984), entitled "Thermogenesis in Brown Adipose Tissue as an Energy Buffer".

The author states that it has been demonstrated in laboratory animals that "brown adipose tissue buffers changes in food intake." Saying this a different way, as a person overeats or undereats, the brown adipose tissue is more labile than the white adipose tissue and, because of this special ability, it is able to help maintain an even weight. It is said in the article that brown adipose tissue can break down and form heat as a means of dissipating energy obtained from food stuffs. Furthermore, it is indicated that there are two external stimuli which can trigger this so-called, "thermogenesis": exposure to cold and the ingestion of food. Himms-Hagen states that actually, given a certain scenario, thermogenesis produced by either of the two above methods (diet or cold), can be the major variable in evaluating an energy balance. He goes on to state that the thrust of his review is to the following effect, "thermogenesis in brown adipose tissue serves as an energy buffer and its corollary, that defective energy buffering by brown adipose tissue can result in deficient energy expenditure, an energy imbalance, and obesity".

Brown adipose tissue differs in its locale in the body and in its structure from white adipose tissue. Brown adipose tissue is found in the scapular regions, the axillary regions, the cervical region, around the great vessels and in the rib cage. The individual cells of brown fat are said to contain several fatty droplets and large mitochondria. White adipose tissue contains only small mitochondria. Of particular importance is the fact that brown adipose tissue has a very abundant supply of sympathetic nerves and the principal chemical intermediary controlling brown adipose tissue is said to be norepinephrine; white adipose tissue, on the other hand, has a relatively scant nerve supply. The author goes on to relate that brown adipose tissue can oxidize fat stores, whereas white adipose tissue releases fat stores, so-to-speak, for export to other areas. Hormones play a large role in the function of brown adipose tissue. The two most important of those are insulin and epinephrine. Biochemical studies have been performed on the mitochondria of brown adipose tissue and it is found that they can become what is known as physiologically uncoupled. This changes the activity of the proton-electron system. When this uncoupling occurs, heat production is said to occur at the highest rates. The mechanism whereby brown adipose tissue gives up its energy is said to be controlled

by the sympathetic nervous system, which releases norepinephrine which, in turn, reacts with receptors on the cell surface of brown adipose tissue; this leads to stimulation of the Cyclic AMP activity and it, in turn, leads to the activation of intracellular lipase. One of the fascinating points the author makes is that thyroid hormone is necessary for this process to go on optimally, although it is not a major source in the chemical process.

A good deal of study has been performed on thermogenesis of brown adipose tissue, according to the author, and it appears from these investigations, that brown adipose fat is one of the large contributors to the so-called overall energy expenditure of the body—and this, in the face of the fact that brown fat is said to represent only one to three percent of the total body weight. It has been found out in experimental animals that rats exposed to prolonged cold or given free choice of food have an increase in the amount of brown fat —both hyperplasia and increased cell size; the mitochondria also increase in size. This increase in brown adipose tissue is said to be under the control of the sympathetic nervous system—not the endocrine system.

Himms-Hagen has reviewed the energy balance in normal, lean animals, and he reiterates that "thermogenesis in brown adipose tissue is an important component in energy expenditure in two types of normal, lean animals: cold-acclimated rats and rats on a cafeteria diet". He describes that cold-acclimated rats eat almost twice as much as rats in a warm environment and still remain lean. He goes on to say that the heat produced after eating may be one of the several mechanisms that control the desire to eat and a feeling of fullness after eating a certain amount. Himms-Hagen summarizes this by saying, "two different types of defects in the regulation and function of brown adipose tissue can be identified in the animal models of obesity discussed above: a defect in the brown adipose tissue itself and a defect in the central control of the tissue's function".

Although much of the above work was done on animals, brown adipose tissue has been studied in human beings. Brown adipose issue is present, in fair amounts, in human beings, and one method of detection, aside from histologic observation, is the use of thermography which allows investigators to observe where the greatest source of radiant heat occurs. It appears from the studies reported that humans do not have relatively as much brown adipose tissue as laboratory animals, and when humans are stimulated with norepinephrine, the amount of thermogenesis goes up only 30 to 60 percent, whereas in laboratory animals, it may go up as much as 300 percent. The full role of food as a thermogenetic stimulus is unclear because, after eating there is a sort-term thermogenesis and a long-term thermogenesis—which many authors have not noted in their research models; thus, the issue is somewhat confused. It is believed that the long-lasting thermogenesis effect of food is mediated through the sympathetic nervous system. All in all, the information presented by the author indicates brown adipose tissue plays a significant role as an energy buffer in animals, but the findings in humans suggest that brown fat plays a lesser role as an energy buffer. It is apparent that more advanced techniques are necessary before humans can be satisfactorily studied to know the role of brown adipose tissue in controlling the metabolism of the body when exposed to cold and to a variety of foods.



ANSWER—Electrocardiogram of the Month

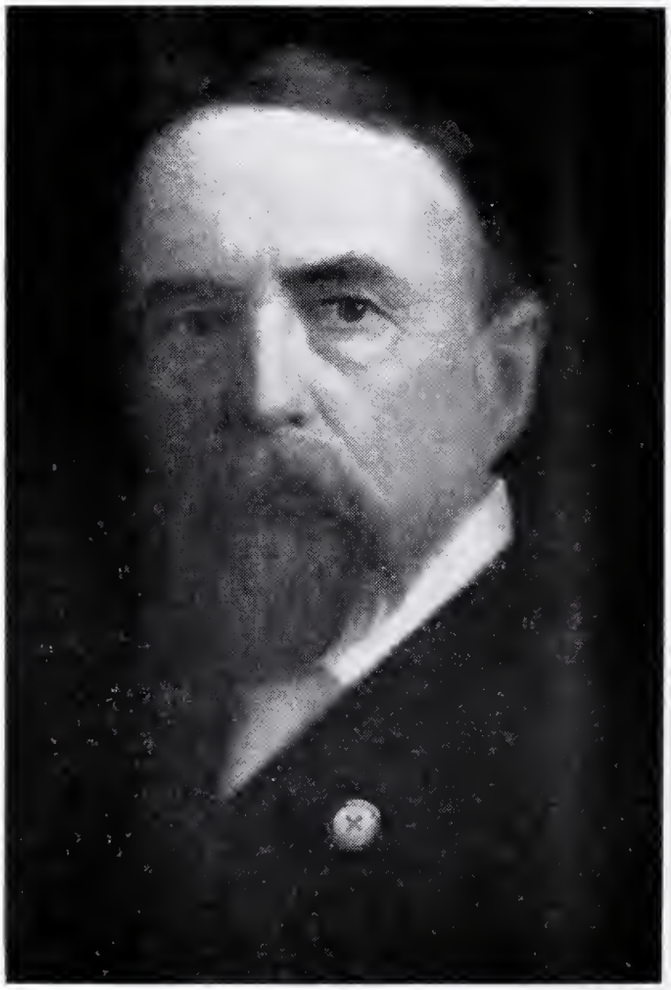
DISCUSSION: The trace shaws a regular tachycardia of 140 beats per minute with wide QRS complexes. The mechanism is not clearly sinus in spite of occosional hints at the presence of P waves. Fusion beats can not be found on the strip. The precordial leads exhibit a concordant pattern. There are no features obvious on this trace which enable ane ta exclude either ventricular or supraventricular tachycardia. The width of the QRS camplexes and the cancardant precordial pattern are somewhat more suggestive of ventricular tachycardia thon otherwise. In the face of ischemic heart disease when fronted by a symptomatic patient, most physicians would have substantial interest in cardioversion. Electrophysiologic studies in this young patient would obviously be of great importonce at some stage of his evaluation.

"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Edwin Bently, M.D.

Fred O. Henker, M.D.*



This professional giant was able to excel in private medical practice, military medicine, medical education and as a diplomat — much of it simultaneously. He practiced from coast to coast and from New England to New Orleans but his best he devoted to the people of Little Rock and Arkansas.

Edwin Bentley was born in New London, Connecticut, July 3, 1824, son of George W. and Anne Williams Bentley and grandson of Ezekiel Bentley.[1] He received his early education in local common schools and under private tutors. Medical education was at New York Medical College, Twenty Third Street Medical College, Bellevue Medical College and University of the City of New York. He received the M.D. in 1849[2] following which he practiced medicine in Norwich, Connecticut until, at the beginning of the Civil War, he was appointed Assistant Surgeon in the Fourth Connecticut Infantry, U. S. Volunteers on June 6, 1861. He served in the Alexandria Virginia-Washington, D. C. area and continued in service after the war. During this time he married Margurite E. Williams of Washington, D. C.[2] Along with military duties he made time for medical teaching, becoming the first professor of Anatomy at Howard University.[2] In 1869 he was transferred to the west coast rendering service in California and neighboring territory.[3] A son, Carl E. Bentley, later to become an outstanding physician in Little Rock,[4] was born in San Francisco in 1871.[2] In addition to his military duties he served as Professor of Anatomy at Medical College of the Pacific from 1870 to 1875.[2]

Dr. Bentley's health broke in 1873 due to hardships suffered in the Black Hills during the Modoc War.[4] Between December 1875 and March 1876 he obtained leave of absence to serve as Superintendent of California Insane Asylum at Napa, studying mental diseases. Health still impaired, he was given transfer to New Orleans where he received recognition for his skill in checking a smallpox (or yellow fever[2]) epidemic in 1877.[4] Transferred to Little Rock Barracks later that year, as post surgeon,[3] he quickly established himself in the military, medical and social circles of the city. He was active in the founding, in 1879, of the Medical Department of Arkansas Industrial University[5] and establishment of the first free clinic in back of Fones Brothers Hardware at Second and Main Street,[4] all the while fulfilling his military duties. Obviously he was greatly missed when transferred to Texas in 1884,[3] and a source of great joy to himself and the citizens when he was reassigned to Little Rock Barracks in 1886 where on July 3, 1888, he was retired by law, having reached the age of 64.[3]

*Department of Psychiatry, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.

This was no usual retirement, however; Dr. Bentley entered private practice from his office at 617 Main being acclaimed a leading physician and surgeon in the area. He also served the Medicine School as professor of Surgical Theory and Practice of Medicine and as dean from 1904 to 1907.[2]

A capable and dedicated doctor he practiced actively until 8 weeks before his death, at age 92, February 5, 1917, at his home, a stately mansion at Thirteenth and McAlmont Streets—fittingly the site of the Medical School Building occupied between 1936 and 1957. Burial was in Arlington National Cemetery.[1]

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Bentley home on site occupied by University of Arkansas Medical School, 1936 to 1957.

MEDICINE IN THE NEWS



THE MONTH IN WASHINGTON

Heart Transplants Under Consideration For Medicare

Heart transplantation is being rapidly transformed from an experimental to a therapeutic procedure, federal officials announced at a Washington recent press conference.

They stopped short of guaranteeing Medicare coverage for the procedure, however, saying it needed further study over the next several months.

The government's new review of heart transplantation was prompted by the optimistic results of a long-awaited study by the Battelle Research Center.

The $1.6 million study analyzed the cost and outcome of 441 heart transplant cases performed between 1975 and 1983 at six national transplant centers.

If the government decides to reimburse under Medicare, probably only 85 to 100 of the 42.7 million Americans with cardiovascular disease will be eligible for surgery each year. It is likely that selection criteria will be very stringent, limiting transplants to patients under age 55 and free of other medical problems. Because Medicare is restricted to persons over age 65 or disabled more than two years, few of these beneficiaries will qualify.

Thus, the pricetag may be relatively small. Battelle researchers estimated that the total cost of covering heart transplantation would range from $2 million to $3.5 million a year, much less than the $2 billion a year spent on the controversial End Stage Renal Disease Program (ESRD). Each heart transplant recipient would cost roughly $37,000, compared to the $30,000 spent on each of the 70,000 ESRD dialysis patients each year, but with only a few hundred patients qualifying, the total cost should be low.

The Battelle study found that roughly 80% recipients of heart transplants are alive after 1 year and 50% are alive after 5 years. One-quarter will survive longer than 10 years. An estimated 32% of transplant recipients have gone back to work and 67% consider themselves "in good health". The dramatic increase in survival rates for heart transplant recipients can be traced back to the introduction of cyclosporine in 1980.

Complications, when they appear, are generally linked to immunosuppressive therapy. Five complications are most common: osteoporosis (18.2%), diabetes (14.9%), vision disorders (14.3%), back or spine disorders (8.8%), and cancer (6.1%).

Selection criteria for patients were strict, thus excluding aged or sick patients who would have lowered survival statistics, the study found. The typical recipient was only 42-years-old. The six centers accept only persons who are free of active infection, multiple organ dysfunction, illness or rehabilitative difficulties, pulmonary problems, or diabetes.

Funding is a major source of concern for heart transplant recipients. Although the majority of private insurers and 12 states pay for transplant procedures, roughly 70% of recipients paid for pre-transplant and post-transplant expenses out of their own pockets.

In many cases, recipients depended upon the transplant center or direct donations to help fund their procedure.

"It is still a technique to be applied only when a specific set of clinical criteria have been fulfilled", warned HHS Secretary Margaret Heckler. "Data suggest that the rate of success may be accomplished only in medical centers where a "critical mass" of clinical experience and expertise has been gathered."

"We would never take a position that would simply guarantee heart transplants to every American at government expense", she added. "We would oppose universal eligibility for government funding for heart transplants."

* * * *

Supreme Court Agrees To Rule On Abortion . . . Again

The abortion issue will take on new prominence next fall as the Supreme Court justices review two controversial state abortion laws.

The two state laws—in Pennsylvania and Illinois—already have been declared unconstitutional by federal appeals courts. The laws would have given the state governments a major role in the abortion decisionmaking process by specifying how a doctor must perform some abortions and what he must tell his patients.

Court approval of the laws could give abortion opponents a green light to pass more restrictive state laws.

On the other hand, rejection of the laws would further protect a woman's right to abortion and reduce the risk of later tampering by a Reagan-appointed member of the court.

The court's decision to review the laws puzzles both advocates and opponents of abortion. It is uncertain, they say, whether the court will try to expand or contract the power of states to regulate abortion.

The two cases to be argued in the next session are:

- ★ An Illinois law that would have made it a crime for a doctor to cause the death of a viable fetus by performing an abortion. It also would have required that doctors inform their patients that some contraceptives—such as IUDs and morning-after pills—are "abortifacients" that cause fetal death by preventing the fertilized egg to reach the womb.
- ★ A Pennsylvania law would have required that a doctor give a detailed description of the risks of abortion. In addition, it would have imposed a 24-hour waiting period and required that all second trimester abortions be performed in a hospital.

Similar state provisions were overturned two years ago in the Supreme Court's 6-to-3 decision in *City of Akron* v. *Akron Center for Reproductive Health*. This decision, which rejected the state's role in determining where, and how, an abortion is performed, was assumed to have firmly established a woman's right to the procedure.

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NIH Says 'No' To Central Transplant Registry

A centralized national registry for bone marrow transplant donors should not be established at this time, a panel of National Institute of Health (NIH) transplant specialists has recommended.

Instead, the medical community should promote and expand the local registries that already exist, it said.

Only one-third of patients needing bone marrow transplants have an HLA-identical sibling donor. Since there is low probability of finding HLA matches in unrelated persons, registries seek large numbers of volunteers to serve as potential donors.

However, of the 70 patients transplanted with marrow from matched unrelated donors, only 20% have survived 3 months; one patient has survived 3½ years.

Merging local donor programs into a single national data base could in fact, be counterproductive, the panel said. Donation of bone marrow is highly dependent upon a spirit of voluntarism and altruism; local centers are effective because of the extent of local community involvement. A broad national program could be less effective, it believed.

* * * *

Senate Panel Finds Pacemaker Problems Persist

Two years after a major shakeup in the pacemaker industry, significant problems persist, the Senate Special Committee on Aging has found.

Overutilization, defective devices, fraud and abuse continue to plague the pacemaker industry, its investigation revealed. In addition, the congressionally mandated National Pacemaker Registry—which would have monitored pacemaker performance and utilization—has not yet been established.

A 1982 Congressional hearing found that some pacemaker prices were marked up as much as 560%; physicians were charging up to $2,000 for implants; warranties were uncollected by Medicare; physicians were making unnecessary implantations; and payments were provided to physicians who implanted a certain brand of pacemaker.

Based on these findings, Congress attempted to tighten up the industry by enacting legislation that established the Registry, new guidelines for implantation monitoring, and other provisions.

Now, Congress says that the law has been neglected and the Pacemaker Registry has become a "hot potato" between the Food and Drug Administration and the Health Care Financing Administration.

The new investigation found:

- ★ Continued overutilization of pacemakers; as many as 30,000 of the estimated 110,000 original pacemaker implants may have been unnecessary, according to a General Accounting Office review included in the investigation.

In addition, as many as 21,000 replacement implants may be unnecessary.

★ Kickbacks, fraud and abuse continue. There have been two criminal convictions since the 1982 hearing: Pacesetters Systems Inc. and Telectronics officials pleaded guilty to offering kickbacks to physicians who used their pacemakers. Additional FBI investigations are underway.

★ Delay in implementing the Registry. The deadline for the Registry to be in operation was January 1985. Now, FDA says the Registry will be operational by December 1987.

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Alzheimer's Hearings Launched

"Like so many unfortunate victims of Alzheimer's disease, my father lost virtually all mental and neurological functions", Maria O'Brien, recently told members of a House of Representatives subcommittee in May. O'Brien was speaking of Academy Award-winning actor Edmond O'Brien.

"Ironically, a man who once could hold an audience in the palm of his hand, towards the end had great difficulty expressing even his most basic feelings of affection, recognition and love", she said.

The burden of around-the-clock care and supervision rests squarely on the family, she said. Families suffer in silence, receiving little help. The prognosis is often poverty. Medicare does not cover the cost of caring for the Alzheimer's patient, either at home or in a nursing home. There is no insurance, no tax break, and very often no affordable in-home or day care programs capable of caring for Alzheimer's patients, added other witnesses testifying at the hearing.

Rep. Edward R. Roybal (D-CA), chairman of the House Select Committee on Aging, is proposing legislation that he believes would ease the burden of the disease on its victims and their families.

If passed, the Comprehensive Alzheimer's Assistance, Research and Education Act (CARE) of 1985 would:

- establish a national educational program.
- create model state programs to educate the public and offer support,
- expand federal research into the causes, prevention, and treatment,
- develop methods of service delivery that will encourage care in the home yet reduce the stress on families of patients, and
- increase the training of health care professionals to improve the diagnosis, treatment, and management of the disease.

"Alzheimer's disease demands special attention", said Rep. Roybal. "My bill is proposing a substantial step forward in funding for research and a beginning step in support for the families."

Next year, he says he will introduce a larger and more comprehensive bill for Alzheimer's patients and their families. Congress should boost funding for the disease "severalfold", he said. "The federal government must do more."

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Senior Citizens Decry Drug Testing

Elderly residents of nursing homes have been used in drug experiments without their knowledge or informed consent, according to documents obtained by the National Council of Senior Citizens.

At least eight physicians who contracted with nursing homes to test experimental drugs violated federal law by using harmful tests and practices, internal Food and Drug Administration (FDA) documents reveal.

Some of the investigators have been permanently disqualified by the FDA; others have been temporarily disqualified or reprimanded.

In some cases, drugs were given surreptitiously in food. In other cases, they were given to persons with mental infirmities or who could not speak English. Many patients had pre-existing health conditions or were too old to safely participate in testing.

Physicians implicated in the FDA investigation say that the majority of testing is performed in a careful and responsible way. Overly restrictive FDA regulations, if followed to the letter of the law, would prohibit the majority of drug testing in the elderly, they respond.

For instance, it is virtually impossible to find an 85-year-old who is disease-free and not taking other medications, said Richard Morris, M.D., medical director of the skilled nursing home Chester Extended Care Center. Dr. Morris was investigated by FDA but the agency has since dropped any action against him.

The Council has asked that all drug testing be immediately suspended in nursing homes where there is suspicion of abuse or past record of violations. Congress should investigate whether drug testing in nursing homes should be prohibited

except under highly restrictive conditions, the Council said.

* * * *

Senate Witnesses Drug Herbal Medicine

Manufacturers of non-prescription diet drugs should be required to prove that their products are safe and effective, just like pharmaceutical manufacturers, scientists urged legislators at a May congressional hearing.

"I do not believe that the makers of herbal medicines should be treated any differently than the makers of medicines of other kinds", said Varro E. Tyler, Ph.D., dean of the School of Pharmacy at Purdue University and an authority in herbal medicine.

"The public needs to be protected from false claims that can empty its pocketbook and destroy its health", said Xavier Pi-Sunyer, M.D., associate professor of medicine at Columbia University.

Under current law, the government has the burden of proving that a diet scheme will not work as advertised. Manufacturers often try to find flaws in the government's case or delay legal proceedings, thus prolonging their sales of the product.

Herbalife International, the largest U. S. distributor of health products, came under fiercest attack by those attending the hearing of the investigative subcommittee of the Senate Committee on Governmental Affairs.

Although the $512 million-a-year company is prohibited from making medicinal claims for its products, it now uses testimonials from customers on cable television. Overweight persons are vulnerable consumers who are often embarrassed to admit that a product did not work, noted subcommittee staffers.

The FDA has received four reports of death, 90 complaints of illnesses and 32 reports alleging fraud by consumers of Herbalife products. Although no definite conclusions have been reached about the safety of the product, further investigation seems warranted, legislators said.

Subcommittee Chairman Sen. William V. Roth Jr. (R-DE) urged FDA to pay more scrupulous attention to the adverse reactions of the product. But the FDA needs a clear directive from Congress before regulating the diet industry, FDA Commissioner Frank E. Young, M.D., responded.

The claims made for Herbalife products are false and deceptive, scientists testified. Most herbs do not produce the therapeutic effects claimed for them, they said. Even if the herbs had such effects, the Herbalife doses are too small to have any physiological impact, they added.

Moreover, the products may be toxic to consumers. Some of their components—such as schisandra, tong kuei, caffeine, and some laxatives—could pose health problems to unsuspecting buyers, they said.

* * * *

Congressional Budget Bleak For Physicians

Legislators, just returning from a Memorial Day recess, were expected during the first week of June to enter a new round in their annual wrestling match with a federal budget measure.

The action now moves to a conference between the House and the Senate where the Senate is considered likely to back away from its proposal to freeze cost of living adjustments for Social Security and other retirement plans and the House is expected to compromise somewhat on its plan to freeze defense spending.

Debate will also involve the Medicare program where the House has rejected the Senate approach of increasing some beneficiary cost-sharing and of exempting some Medicare "participating" physicians from a plan to continue the current freeze on Medicare fees. Medicaid, too, is an issue since the Senate assumed savings of $1.2 billion over three years while the House would permit inflation adjustments for this program.

The cliff-hanging Senate vote came in the wee hours of the morning on May 12 as California Republican Pete Wilson, recuperating from an appendectomy, arrived by ambulance to tie the vote. Vice President George Bush cast the deciding vote.

The Senate package would cut Medicaid by $1.2 billion in the next three years through "administrative actions". Medicare would be cut by $16.3 billion over the next three years and the current freeze on Medicare fees would continue for "nonparticipating" physicians. Some sort of a fee increase is assumed for physicians "participating" but details have not been worked out.

Hospital diagnosis related group (DRG) rates would be frozen. The adjustment for indirect costs of graduate medical education would be cut in half and the payment for direct graduate medical education costs capped. The measure also would increase the premiums beneficiaries pay for medical services (Part B) under Medicare from the current 25% of costs to 30% of costs.

The House plan, adopted May 22, had a surprisingly smooth passage and no substantive debate on health issues. Much vaguer in its assumptions than the Senate measure, it calls for $13 billion in Medicare savings over the next three years. Some $3 billion is to come from unspecified reforms that are not to include beneficiary cost increases; another $10 billion is to come from a "one-year freeze" on Medicare providers.

While the proposal does not spell out any details, the size of the savings, the lack of any language to the contrary, and reports from House budget staff lead to the conclusion that the freeze on providers includes a continued freeze on all physician fees. There are some indications, however, that many House members would be willing to accept the Senate provision increasing fees for physicians who signed Medicare participating agreements.

Congressional members have reported, however, that although the American Medical Association and other medical groups have strongly protested budget proposals to continue the current Medicare freeze, individual physicians have not expressed significant opposition to this proposal. Their comments have sparked a massive AMA campaign to encourage physicians to communicate their concerns about the budget—particularly the continuation of the physician fee freeze and the cuts in Medicare support of graduate medical education—to their legislators.

Once a compromise has been hewn out by conferees and approved by both the House and Senate, action will move to the Congressional authorizing committees which are directed to meet the budget resolution's specific spending targets for programs under their jurisdiction but can choose their own method of meeting them.

This so-called reconciliation process is likely to begin in mid-June and for Medicare and Medicaid programs will involve the Senate Finance and House Ways and Means and Commerce Committees. An adjustment in the physician fee freeze and increases for at least part of the Medicare participating physicians are considered to have a chance of approval during this process.

Other provisions that could be included in a reconciliation package include bringing state and county workers into Medicare, freezing payments only for certain procedures, an experimental physician prospective payment system, capitation payments, and increases in cigarette taxes.

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GAO Finds Hospital Overpayments

Hospitals have been overpaid under Medicare's prospective pricing system and unless the data the rates are based on are corrected, overpayments could total over $8 billion during the next five years, the General Accounting Office (GAO) has concluded.

In testimony to the House Ways and Means health subcommittee May 14, GAO Associate Director Michael Zimmerman charged that as a result of errors made during the construction of the diagnosis related groups (DRGs), Medicare payments to hospitals will be 4.3% or $940 million higher in fiscal 1986 than they should have been.

The GAO report comes as Congress is considering freezing DRGs next year and it could serve as a rationale for such a freeze. The Prospective Payment Assessment Commission (PROPAC), which Congress created to give advice on DRG rates, has recommended a formula under which rates would increase 1-3% next year.

If rates are allowed to rise according to the current legislated schedule, the result would be an increase of about 5.1% next year.

But Health Care Financing Administration (HCFA) officials plan to propose regulations June 3 that would freeze the rates. Like the GAO, HCFA contends that the rates were set too high initially.

Hospitals are citing the PROPAC recommendation as evidence that a freeze is untenable, and American Hospital Association officials have told Congress that unless other changes are made in the DRG system, hospitals need at least a 4% increase in fiscal 1986 to continue services at their current level.

Yet, the AHA and other hospital groups seem resigned to the freeze. At this point they are only pushing for changes. Chief among these are: an increase for hospitals serving a "disproportionate share" of indigent and/or Medicare patients; changes in the wage indexes believed to discriminate against rural hospitals; and some sort of protection for hospitals whose rates would be "rolled back" and not just frozen under President Reagan's budget proposal.

The "disproportionate share" issue has drawn the most attention. Congress had suggested when it created DRGs that an adjustment might be needed for the "disproportionate share" hospitals

and had directed the Health Care Financing Administration to define and list such hospitals. HCFA has refused to design an adjustment or to turn over to Congress its studies and data on the issue, but the agency now expects a new study by the end of June.

Meanwhile, an angry Ways and Means health subcommittee is working with the American Hospital Association to design its own list. By one estimate, an adjustment might shift about $250 million to these hospitals from all other hospitals.

HCFA has only recently modified a wage price index to take into account parttime employees widely used in rural hospitals, based on a survey of 5,734 hospitals. Overall, hospitals in 27 states (generally in the west and midwest) and the District of Columbia would gain in Medicare payments. Twenty-three states (mostly East of the Mississippi) would suffer overall losses. But the effect would vary by hospital within a state. Slightly more rural areas (27) would profit than would lose (21) and slightly more urban areas (166) would lose than would gain (149).

Congressmen from states that would profit under the new wage index urge that it be applied to new DRG rates to take effect next October. There is general agreement that there should be no retroactive adjustment.

Although most hospitals agree that both the disproportionate share adjustment and the wage index correction should occur before a freeze, the industry is divided on a proposal to halt the transition to a national DRG rate. As the transition continues, teaching institutions, public hospitals, and facilities in high cost states such as California, Illinois, Massachusetts, Missouri, Wisconsin, and Ohio will be paid less while other facilities in states such as Alabama, Arkansas, Georgia, New Jersey, Pennsylvania, Tennessee, and North Carolina will see substantial gains.

Normally, the annual update in DRG rates would have alleviated the impact of the transition. But if rates are frozen, some hospitals will receive considerably lower payments per case in fiscal 1986 than in 1985.

A coalition that includes the Association of American Colleges, the National Association of Public Hospitals and several state associations wants to stop the transition and Rep. Robert Matsui (D-CA) has introduced legislation to this end. The AHA supports the delay and the Federation of American Hospitals board is split on the issue. Another group of nine state associations is opposing any delay.

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Attitudes On HMOs Changing

Although most American physicians still think traditional fee-for-service medicine offers higher quality care than HMOs, 50% of all physicians now have a favorable attitude toward HMOs. Furthermore, HMO patients express greater satisfaction with the quality of their physicians than do non-HMO members.

These results from a just-published survey by Louis Harris Associates contrast with earlier surveys which found in 1980-81 that only 36% of physicians were favorably disposed toward HMOs and that non-HMO patients were more satisfied with the quality of their physicians than were HMO members. Conducted last fall for the Henry J. Kaiser Family Foundation, the survey results are cited as "dramatic evidence that physicians have changed their outlook on HMOs".

The survey found that about 9% of privately-insured American families now have an HMO member and that 40% of those interviewed were interested in joining an HMO. Among the elderly who have been targeted for an HMO enrollment effort, only 6% exhibited a strong interest while another 12% showed some interest. HMOs are growing most rapidly on the East Coast and in the under 40 population.

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Fraud Bill Moves Through House

A bill that would strengthen the government's authority to exclude disciplined physicians from Medicare and Medicaid is moving steadily through the House of Representatives but has not progressed in the Senate.

The bill, HR-1868, was approved unanimously by both the House Ways and Means and Energy and Commerce committees, thus clearing the way for consideration by the full House. The law is aimed at loopholes in the current law which permit a physician who loses a license in one state to treat Medicare and Medicaid patients in another state in which he also holds a license. Current law also does not permit the exclusion from a federal program of a provider who has been barred from another federal program.

HR-1868 would authorize the Department of Health and Human Services to bar from any federal program any provider who: was convicted of abusing program finances, patients, or con-

trolled substances; lost or surrendered his license for cause in any state; provided excessive or poor quality care. If the provider was convicted of a criminal act against Medicare or one of its patients, the minimum period of the exclusion would be five years.

The American Medical Association has supported the aim of the bill but did not support the minimum five-year exclusion and contended that the authority to exclude physicians who provided excessive or poor quality care already exists in the Peer Review Organization law.

The other bills also were incorporated into HR-1868. One measure that had been opposed by the AMA would allow the Attorney General to revoke the drug prescribing authority of any physician banned from Medicare and Medicaid. The other, which had the general support of the AMA, would authorize civil and monetary penalties against anyone who misrepresents himself as a physician.

Senate Aging Committee chairman John Heinz (R-PA) has introduced similar legislation in the Senate but the bill has yet to be considered in Committee. Meanwhile, the Reagan administration reportedly is developing its own fraud and abuse measure and expects to have it introduced in the Senate.

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AMA Loses Super-PRO Bid

A contract to monitor the work of Medicare's Peer Review Organizations (PROs) will not go to the American Medical Association, which had submitted two bids for the so-called Super-PRO.

Although the contract has not yet been awarded, the AMA was notified that it is no longer in the running for the contract. The letter of notification concluded that the AMA proposal is "not within the competitive range, price or other factors considered".

The notification comes amid rumors that budget cuts within the Health Care Financing Administration have left the agency with less than $2 million for the Super-PRO. It follows an earlier funding problem which forced PRO officials to scale down and reissue their Super-PRO bid request after the AMA and the other three bidders all came in at prices above the $5 million the agency was then reported to have set aside for the winning bidder.

The AMA reportedly was one of 13 leaders in a field that has now been narrowed to two. A selection is expected by about June 10.

The AMA had no immediate comment on the loss of the Super-PRO contract. At a Senate hearing earlier this spring, however, William Felts, M.D., a member of the Association's council on legislation, said that while the contract should go to the AMA, the association would continue to oversee the PROs through its own special monitoring program even if the contract went to another bidder.

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Health Manpower . . . Continued?

Rejecting President Reagan's contention that health manpower programs no longer warrant federal support, the House Commerce Committee last month approved bills extending programs the President proposed to abolish.

The programs include the health professions training assistance, nurse training programs, and the National Health Service Corps reauthorizations which were vetoed by the President last fall and eliminated in his fiscal 1986 budget on grounds that the U. S. already has a surplus of physicians and an adequate supply of nurses.

The committee also approved a bill continuing assistance to community and migrant health centers which the President had proposed to put into a block grant along with black lung disease programs. New federal support of HMOs would be eliminated.

Approved by a convincing 17/6 vote, the health professions bill (HR-2410) in fiscal 1986 would fund physician and other health professionals at their 1985 level of $141 million. Inflation adjustments would be authorized in 1987 and 1988.

Other bills approved by the committee are:

- ★ HR-2418 which authorizes $1.3 billion over the next three fiscal years for community health centers and $167 million for migrant health centers. HMO aid would be phased out as current grants expire.
- ★ HR-2237 which funds the National Health Service Corps field service at $75 million in each of the next three years and provides "such sums as necessary" to award 1,175 new scholarships over the next three years.
- ★ HR-2370 which funds nurse training programs at the current level of about $50 million in fiscal 1986. Funds would increase by 5% in 1987 and again in 1988.

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Anti-And Pro-Abortion Campaigns Launched

To counter to the recent wave of anti-abortion publicity, the Planned Parenthood Federation of America has launched a four-stage advertising campaign which defends the rights of women to receive abortion.

Newspaper ads in five major U. S. cities will describe why it is important that abortion remains legal. Headlines will read: "Abortion Is Never The Easy Way Out", "Nine Reasons Why Abortions Are Legal", and "Motherhood Should Be A Joy, Not A Life Sentence".

The full-page ads began appearing in late May in the *New York Times, Washington Post, Chicago Tribune, San Francisco Chronicle,* and *Los Angeles Times.*

An anti-abortion coalition has launched its own publicity campaign called "A Year of Pain and Fear". Specific hospitals, doctors offices, and pharmaceutical manufacturers have been targeted as the site for demonstrations begin this summer. Magazine ads will follow later in the year, some directly aimed toward various ethnic groups.

Also planned is a publicity event about the 20th anniversary of the U. S. Supreme Court decision in *Griswold* v. *Connecticut,* which ruled that married couples have a right to use contraceptives.

In the campaign's final stage, Planned Parenthood officials will release a new film that describes the plight of women seeking abortions. It will show the public that most women have abortions for "intensely persons reasons", and are not uncaring, unhuman criminals, Planned Parenthood officials said.

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Tobacco Industry Rebuked On Label Rotations

A tobacco industry proposal to run cigarette label warnings simultaneously, rather than rotating every three months, has been rejected by the Federal Trade Commission (FTC).

A bill passed by Congress last year specifically stated that cigarette packages should run four different warnings each year. Rotating warnings would have greater impact on smokers, Congress believed.

The quarterly printing of different warnings—in January, April, July and October—is too expensive, the tobacco companies said. It is estimated that the label change will cost a total of $12 million a year for tobacco firms.

The FTC does not have the discretion to change a statute passed by Congress, said spokeswoman Judy Pond. The FTC, however, plans to ask Congress to review the statute to see whether label modifications are acceptable.

* * * *

FDA Delays Salt Labeling On Foods

Under pressure from food manufacturers and supermarkets, the Food and Drug Administration has agreed to postpone mandatory sodium labeling for food packages.

New regulations, which were to have gone into effect by July 1, required that any food labels that list nutritional ingredients must also disclose levels of sodium. The regulations also set criteria for label claims of "very low sodium", "low sodium", "sodium free", "reduced sodium", and "unsalted". An estimated 3,500 companies are subject to regulation.

The regulations are now scheduled to go into effect one year later, on July 1, 1986.

The FDA received 66 requests from food producers and distributors—such as Kraft, Giant Food, Grand Union, Dole, and Castle & Cooke—to delay implementation of the regulation. The companies said they had stockpiles of old labels that needed to be used. The cost of destroying left-over old labels and printing new labels could have been passed onto the consumer, they said.

Consumer groups believe that each extension should be considered on a case-by-case basis, as stated in the original regulations. The FDA, however, believed that an across-the-board extension would be more efficient.

* * * *

GHE Issue Heating Up In Congress

Newly proposed regulations to freeze Medicare support of direct costs of graduate medical education for a year could prove short-lived if Congress acts on either of two recently-introduced legislative alternatives.

The regulations, which were published in the Federal Register May 21, would implement one of the President's budget proposals and would save an estimated $145 million in fiscal 1986. HCFA proposes a one-year freeze, but requests comments on the advisability of continuing the freeze in future years.

The comment period on the regulations runs until June 20 but the regulation would be implemented on July 1, leaving an extremely tight time frame for assessing and incorporating any comments.

Meanwhile, legislators are moving ahead with their own plans to reform Medicare support of direct medical education costs.

In the Senate, Sens. Robert Dole (R-KS), Dave Durenberger (R-MN) and Lloyd Bentsen (D-TX) have introduced legislation that would freeze these payments for a year, would limit support to five years per student, and eliminate support for foreign medical graduates who are not U. S. citizens.

In the House, Rep. Ralph Regula (R-OH) is sponsoring a plan that would replace the current direct medical education cost pass-through with grants to hospitals. Payments would be capped at $1.015 billion in fiscal 1986 with future increases tied to the increase in the consumer price index.

A formula based on the proportion of residents and Medicare patients at the hospital would be used to determine the payments to individual institutions. Payments would be adjusted for increases of up to 10% in the institution's training program but penalties would be imposed when the increases exceeded 10%.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

NUTRITION AND AGING

Presented by Ronni Chernoff, Ph.D., and David A. Lipschitz, M.D., *September 11-12, (September 11th 8:00-5:30; September 12th 8:30-4:30),* Excelsior Hotel, Little Rock. Thirteen hours Category I credit. Fees: $175; VA employees $50. Sponsored by UAMS.

NEUROTOXICOLOGY IN THE FETUS AND CHILD

Presented by Joan M. Cranmer, Ph.D., *September 9-13,* Excelsior Hotel, Little Rock. Twenty-one hours Category I credit. Fee: $180 before August 1; $200 after August 1. 50% pre-doctoral student discount. Sponsored by UAMS.

ARKANSAS ACADEMY OF OPHTHALMOLOGY, ANNUAL FALL MEETING

Presented by Dr. Myron Yankoff, *September 13-14, 8:30 a.m.-12:00 noon* (noon meeting of the Arkansas Ophthalmological Society Friday, September 13). Fairfield Bay. Six hours Category I credit. Meeting registration fee $50. Sponsored by Arkansas Academy of Ophthalmology.

REGIONAL PERINATAL CONFERENCE

Presented by Frank Miller, M.D., *September 13-14,* Fayetteville Hilton, Fayetteville. Time, credit hours, fee to be announced. Sponsored by UAMS.

ABDOMINAL TRAUMA

Presented by John B. Cone, M.D., *September 20-21.* Time, location, credit hours, fee to be announced. Sponsored by UAMS.

UPDATE FOR THE PRACTITIONER ON DIAGNOSIS AND MANAGEMENT OF BRAIN TUMORS IN CHILDHOOD

Presented by Morris Kletzel, M.D., and D. H. Berry, M.D., *October 26, 8:00 a.m.-12:30 p.m.,* Education II Building, UAMS, Little Rock. Four hours Category I credit. Fee: $50. Sponsored by UAMS.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.

Pathology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC-South Arkansas.
Colposcopy-Pap Smear Clinic, fourth Tuesday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:15 p.m. to 1:30 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, second and fourth Thursday, 12:15 p.m. to 1:30 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pediatric Conference, second and third Friday, 12:30 p.m. to 1:30 p.m., (second Friday, Warner Brown Hospital, third Friday, Union Medical Center).

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology-Mortality Conference, second Thursday, 3:00 p.m., Conference Room, Building 1.
Radiology Conference, third Thursday, 1:00 p.m., Conference Room, Building 1.
ICU Lecture Series, second Friday, 1:30 p.m., Conference Room, Building 1.

JONESBORO — AHEC-NORTHEAST

SPECIAL SEMINAR: Pediatric Update — 1985, September 26.
AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Respiratory Care Case Conference, each Wednesday, 1:00 p.m., Second Floor Classroom.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neurology Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
General Pediatric Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pathology Conference, first, second, fourth and fifth Thursday, 12:00 noon to 1:00 p.m., Pathology Library.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #2.

LITTLE ROCK — ST. VINCENT INFIRMARY

Interhospital GI Problems Conference, first Monday, 6:00 p.m. to 7:30 p.m., Classroom 3, Education Wing.
Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Maumelle Dining Room.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interhospital GI Problems Conference, first Monday, 6:00 p.m., St. Vincent Infirmary, Classroom 3, Education Wing.
OB/Gyn Grand Rounds, each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/135.
Mental Health Services Grand Rounds, dates TBA. 10:00 a.m., Arkansas Mental Health Services Administration Building, third floor conference room.
Psychiatry Grand Rounds, each Thursday, 12:00 noon, UAMS Child Study Center Auditorium.

Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Ed II Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS Ambulatory Care Center Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Ed II Building, Room G/135.
Arkansas Academy of Pathology, first Wednesday, 5:30 p.m., Coy's Restaurant.
Surgical Science Conference, each Saturday, 8:00 a.m., Ed II Building, Room G/131.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Psychiatry Service Lecture Series, each Wednesday, 1:00 p.m., NLRVA, Building 170.
VA Medicine Service Teaching Conference, each Monday, 3:30 p.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rolswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC-SOUTHWEST

Tumor Conference, September 4, 7:00 a.m., St. Michael Hospital.
Chest Conference, September 18, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category 1 of the Physician's Recognition Award of the American Medical Association.

THINGS TO COME

September 9-13

1985 International Conference on Neurotoxicology of Selected Chemicals. Theme: Neurotoxicology in the Fetus and Child. The Excelsior Hotel, Little Rock. Volunteer platform and/or poster presentations are invited. The Abstract Deadline is August 15. For further information, please contact Dr. Joan M. Cranmer, Conference Chairman, Department of Pediatrics — #512B, University of Arkansas for Medical Sciences, Little Rock 72205; telephone 501-661-5997 or 661-5958.

October 3-5

Third Biannual UCSF Noninvasive Cardiac Imaging Symposium, A Disease-Related Approach. Sponsored by University of California School of Medicine, Department of Radiology, San Francisco. Hyatt Regancy Hotel, San Francisco. 22 hours Category I, AMA. Registration fee $395; residents and fellows—$295. For further information, call 415-666-5808.

October 4-5

Office Emergencies for the Primary Care Physician. Marriot Hotel, Austin, Texas, sponsored by Scott and White, Temple, and the Texas A&M University College of Medicine. AAFP credit of 7½ hours. Tuition: $85. For further information, contact Office of CME, Scott and White, 2401 South 31st Street, Temple, Texas 76508; telephone 817-774-4083.

October 24-25

Fall Meeting, Arkansas Orthopaedic Society. Capital Hotel, Little Rock. Meeting will be dedicated to the history of Orthopaedics in Arkansas. For further information, contact Mr.

Mike Stephenson, 305 Skyline Drive, Russellville, Arkansas 72801; telephone 968-2124.

October 25-27

Diagnostic Radiology Update. University of Texas Health Science Center at Dallas. Mandalay Four Seasons Hotel, Dallas. Registration fees: $300; $175 for residents and fellows. 18 hours Category I AMA. For further information, Dolly Christensen, Director of Radiology Postgraduate Education, University of Texas Health Science Center, 5323 Harry Hines Boulevard, Dallas, Texas 75235; telephone 688-2502 or 688-2166.

November 1-2

ENT/Ophthalmology for the Primary Care Physician. Marriot Hotel, Austin, Texas, sponsored by Scott and White, Temple, and the Texas A&M University College of Medicine. AAFP credit of 7½ hours. Tuition: $85. For further information, contact Office of CME, Scott and White, 2401 South 31st Street, Temple, Texas 76508; telephone 817-774-4083.

November 1-2

Training for Health: Prevention and Treatment of Common Athletic Injuries. Trieber Associates, Inc., and Southern Medical Association. Philadelphia, Pennsylvania. For further information, contact Trieber Associates, Inc., 9407 Jodale Road, Randallstown, Maryland 21133; telephone 301-655-5062.

November 7-9

Arkansas Society of Internal Medicine and American College of Physicians. Arkansas Scientific Meeting. Red Apple Inn, Heber Springs. Registration: $70 for ACP masters, fellows, members/ASIM members; exempt for ACP Associates; $100 nonmembers. Keynote speakers will be Dr. Joseph F. Boyle from Los Angeles who is executive vice president of the American Society Internal Medicine and Immediate past president of AMA; Eugene A. Hildreth, FACP, Regent, American College of Physicians, Philadelphia; Roger C. Bone, FACP, Professor and Chairman, Department of Medicine, Rush-Presbyterian-St. Luke's Medical Center in Chicago; and Peter F. Kohler, FACP, Professor of Medicine, Tulane University School of Medicine, New Orleans.

Topics will include Rheumatology Update, Testing and Treatment in Critical Care Medicine, Update in General Internal Medicine Based on Case Study, and Impact of Current and Pending Legislation on Medical Practice. For further information, contact Dr. Joe B. Hall, 675 Lollar Lane, Fayetteville, Arkansas 72701.

November 15-16

Pediatrics for the Primary Care Physician. Marriot Hotel, Austin, Texas, presented by Scott and White, Temple, and the Texas A&M University College of Medicine. Tuition: $85. For further information, contact Office of CME, Scott and White, 2401 S. 31st Street, Temple, Texas 76508; telephone 817-774-4083.

1986

February-May 9

Twenty-Seventh Postgraduate Institute for Pathologists in Clinical Cytopathology. Johns Hopkins University School of Medicine. February-April, Home Study Course A, personal reading and microscopic study in personal laboratory.

April 28-May 9, In-Residence Course B. Concentrated lecture series, intensive laboratory, and vital clinical experience at the Johns Hopkins Medical Institutions, Baltimore, Maryland.

Courses designed solely for pathologists who are certified (or qualified for certification) by the American Board of Pathology or its international equivalent. 152 AMA Category I credit hours in both courses.

For further information, contact John K. Frost, M.D., 604 Pathology Building, The Johns Hopkins Hospital, Baltimore, Maryland 21205.

February 6-8

The Advanced Hair Replacement Surgery Symposium. Sponsored by the American Academy of Facial Plastic and Reconstructive Surgery. Stough Dermatology and Cutaneous Surgery Clinic and the Majestic Hotel, Hot Springs. The program is accredited for 16 hours in Category I. Registration fee is $525 for AAFPRS members if received before December 31; $575 after December 31. Non-member registration fee is $600 if received before December 31; $650 after December 31. Residents may register for $225. Fees include meals and social functions.

For further information, contact Kathleen Masterson, Congress Coordinator, The Stough Dermatology and Cutaneous Surgery Clinic, P.A., Doctors Park Building, Hot Springs 71901; telephone 624-0673.



PERSONAL AND NEWS ITEMS

MARION COUNTY GAINS PHYSICIANS

Three physicians have been recruited for Marion County. Dr. David S. Estock, a Family Physician, has opened an office in Lead Hill.

Dr. Loyde H. Hudson will practice in Yellville. He is a board certified surgeon and has a special interest in trauma and emergency medicine.

Dr. Rolland L. Bailey will practice Family Medicine in Flippin.

DR. DEFAZIO GUEST SPEAKER

Dr. John C. DeFazio, Jr., spoke on "Arthritis Medication" at a recent meeting of the Four State Arthritis Club.

DR. BROWN IN SPRINGDALE

Dr. David Brown has entered the private practice of Neurology with Drs. Robert Dow and David Davis in Fayetteville.

DR. GOLLADAY SPEAKS

Dr. Steve Golladay of Little Rock recently addressed the Parent Center of Independence County on "Pediatrics".

DR. TUCKER WINS RUNS

Dr. Stephen Tucker of Little Rock won the Great Maumelle Scenic 60-kilometer Run around Lake Maumelle. Dr. Tucker ran the 37.2 mile course in 4 hours 13 minutes 17 seconds, breaking the record of 4:14:38 set in 1983.

DR. SALTZMAN RECEIVES AWARD

Dr. Ben Saltzman of Little Rock has received the 1985 Distinguished Leadership Award from the American Rural Health Association. He received the award at the Association's Sixth Annual Convention in Chicago in June.

DR. POTEET IN LEWISVILLE

Dr. Chuck Poteet, formerly of Little Rock, has joined Dr. Robert Patton at the Lewisville Family Practice Clinic.

800/24-DONOR Hotline

The Hotline, established in 1983 by the North American Transplant Coordinators Organization (NATCO), is an organ donation information and referral hotline for physicians, nurses, and other health care professionals. The Hotline is staffed 24 hours a day by Organ Procurement specialists who direct organ donor referrals to appropriate local or regional organ procurement programs, and provide information on all facets of organ transplantation, and procurement.

Requests for brochures and further information may be directed to NATCO, c/o Shenandoah Valley Transplant Program, V.O.P.A., Box 3198, Winchester, Virginia 22601; telephone 703-662-0222.

MAXICARE ARKANSAS, INC.

Maxicare Arkansas, Inc., has been granted approval by the Insurance Commissioner of Arkansas to operate as a Health Maintenance Organization. This is a joint venture with the Holt-Krock Clinic in Fort Smith and Maxicare Health Plans, Inc., to provide healthcare services in the Fort Smith service area with expansion plans for the entire state.

Ron Yarbrough is the executive director. The office is located at 5000 Rogers Avenue, Suite 400, Fort Smith; telephone 501-484-5130.

DR. FLANIGAN HONORED

Dr. Stevenson Flanigan of Little Rock was presented the Distinguished Faculty Award by the Caduceus Club at its annual meeting in June.

DR. BOLLEN SPEAKS

Dr. Ray Bollen of Malvern discussed "Arthritis" at a recent meeting of the American Association of Retired Persons.

DR. BAILEY HONORED

Dr. Charles Bailey was honored by the citizens of Greenwood upon his retirement from the practice of medicine. The mayor signed a proclamation designating the week of June 24-30 as Dr. Bailey Week and a reception was held in his honor.

DR. WILSON FELLOW

Dr. Morton Wilson of Fort Smith has been accepted as a fellow of the American College of Utilization Review Physicians.

DR. SHANNON MOVES

Dr. Robert F. Shannon has accepted the position of Medical Director of Rivendell Children's Center in Benton. Dr. Shannon was formerly Commissioner of Mental Health.

DR. HICKMAN APPOINTED

Dr. James H. Hickman has been named Director of the State Hospital. Dr. Hickman had been serving as Medical Director of the State Hospital.

DR. COVEY SPEAKS

Dr. David Covey of Searcy spoke to the Foothills

Alzheimer's Support Group on "Possible Causes of Alzheimer's Disease".

STUTTGART GAINS PHYSICIANS

Dr. Gary Wood, an Obstetrician-Gynecologist, has joined the Stuttgart Medical Clinic. Dr. Wood formerly practiced in Little Rock.

Dr. Dennis Yelvington has also joined the Stuttgart Medical Clinic. Dr. Yelvington recently completed his Family Practice training.

DR. DEMIRANDA FELLOW

Dr. Fred DeMiranda of Fort Smith has been named a Fellow of the American Academy of Pediatrics.

DR. ROSENZWEIG APPOINTED

Dr. Joseph Rosenzweig of Hot Springs has been appointed to the Arkansas Advisory Committee of the United States Commission on Civil Rights.

DR. BRUCE RESIGNS

Dr. Thomas A. Bruce has submitted his resignation as Dean of the College of Medicine at the University of Arkansas for Medical Sciences. Dr. Bruce will become Director of Health of the W. K. Kellogg Foundation in Battle Creek, Michigan, September 1. He has served as Dean of the College for eleven years.

Dr. Peter O. Kohler has been named Interim Dean of the College of Medicine. Dr. George L. Ackerman will become Acting Chairman of the Department of Medicine.

FIFTH ANNUAL CRITICAL CARE CONFERENCE

"Meeting the '85 Challenge" was the theme of the conference sponsored by St. Joseph's Regional Health Center in Hot Springs. Dr. Sheryl Davis of Hot Springs spoke on "Anesthesia and Recovery Room Update"; Dr. Gary Meek of Hot Springs spoke on "Assessment of the Patient with Abdominal Pain"; and Dr. Charles Lane of Hot Springs spoke on "Dealing with the Acute Psychiatric Patient".

DR. ALLEN SPEAKS

Dr. James Allen of Batesville spoke at a meeting of the American Association of Retired Persons in Salem.

DR. LAY IN HEBER SPRINGS

Dr. David Lay, a Family Physician, has begun practice in Heber Springs.



NEW MEMBERS

DR. FREDERICK N. BURT

Dr. Burt, a native of Crossett, is a new member of the Ashley County Medical Society.

He was graduated from Arkansas A&M College in 1958 and from the University of Arkansas College of Medicine in 1964. His internship was at John Peter Smith Hospital in Fort Worth, Texas.

Dr. Burt served with the United States Air Force at Little Rock Air Force Base. He had practiced for twenty years in Arkansas, Alabama, Florida, and Guatemala.

Dr. Burt is on the staff of the Ashley Memorial Hospital. He specializes in Emergency Medicine and General Practice.

DR. PAUL DAVIS

Dr. Davis is a new member of the Dallas County Medical Society. He was born in Malvern.

Dr. Davis was graduated from Ouachita Baptist University in 1976 and from the University of Arkansas College of Medicine in 1982. His Family Practice training was with the Area Health Education Center in Pine Bluff.

He has joined the Fordyce Family Practice Clinic at 300 North Clifton.

DR. MARK A. FLOYD

Dr. Floyd, another new member of Dallas County Medical Society, was born in Nashville, Arkansas.

He is a 1976 graduate of Henderson State University and a 1982 graduate of the University of

Arkansas College of Medicine. His training in Family Practice was with the Area Health Education Center in Pine Bluff.

Dr. Floyd has joined the Fordyce Family Practice Clinic at 300 North Clifton.

DR. ROBERT D. JOHNSON

Dr. Johnson has joined the Garland County Medical Society. He was born in Akron, Ohio.

He received a Bachelor of Arts degree from Vanderbilt University in Nashville, Tennessee, and a Master of Science degree from the University of Arkansas in 1968. He is a 1972 graduate of the University of Arkansas College of Medicine. Dr. Johnson served his internship at the University of Arkansas College of Medicine. His residency in Internal Medicine was with the University of Missouri at Kansas City Affiliated Hospitals. He served a fellowship in Pulmonary Medicine at the University of Arkansas College of Medicine. He is board certified in Internal Medicine.

Dr. Johnson practiced for seven years with the Veterans Administration Hospitals in Little Rock and North Little Rock and served as an Assistant Professor at the University of Arkansas College of Medicine until August 1984.

Dr. Johnson specializes in Pulmonary Medicine at 225 Linden in Hot Springs.

RESOLUTIONS



HORACE NEWELL MARVIN

WHEREAS, Horace Newell Marvin in 1942 joined the faculty of the Arkansas Medical School at a salary of $2,000 per year as an Instructor in Anatomy, and

WHEREAS, he became an Assistant Professor of Anatomy and of Internal Medicine a short time later, with responsibility for the Endocrinology Program of the School, and

WHEREAS, in 1948 he left for two years to become Head of the Biology Department at the M. D. Anderson Hospital for Cancer Research in Houston, serving concomitantly as a faculty member in the dental school of the University of Texas, and

WHEREAS, on his return to Arkansas in 1950 as Associate Professor of Anatomy he began one of his most fertile periods of teaching and research, publishing broadly with various faculty colleagues and gaining research support for studies on bone marrow metabolism/red blood cell survival from the National Institutes for Health, the American Cancer Society, and the Atomic Energy Commission at Los Alamos, and

WHEREAS, in 1958 he became Professor and Chairman of the Department of Anatomy, leading that distinguished department to new heights in scholarship and dedicated instruction, and

WHEREAS, he spent 1963 at the invitation of the Commonwealth Fund as a Visiting Professor and Consultant at the new medical school of the University of Lagos in Nigeria, developing through that experience some of the most indelible memories of his professional life, and

WHEREAS, he was appointed in 1965 to a half-time position as Associate Dean of the School of Medicine, while continuing his duties as Chairman of the Department of Anatomy, and

WHEREAS, in 1967 he relinquished his administrative duties in Anatomy to assume full responsibilities as Associate Dean of the School of Medicine, serving initially with Dean W. K. Shorey and after 1974 with Dean T. A. Bruce, all the while continuing as a teacher and scientific investigator, and

WHEREAS, in 1977 he returned to full-time academic life except for one year's service as Interim Chairman of the Department of Anatomy, and

WHEREAS, his incredible achievements in teaching thousands of predoctoral students over the years, his meticulous and methodical pursuit of new knowledge in hematologic and endocrinologic anatomy/embryology, and his wise and down-to-earth logic in the counselling of young men and young women engaged in the study of medicine are even now an inspiration to his peers, and

WHEREAS, he has shown particular sensitivity to the needs of the under-priviliged and the unrecognized, and to those who have been handicapped by virtue of hereditary or environmental

defects, or who have been limited in opportunity on the basis of sex, race, religion or national origin, quoting frequently an old Indian adage: "nothing is so perfect that a blemish or defect doesn't add character and individuality, making the unmarred portion even more strikingly beautiful", and,

WHEREAS, he has demonstrated throughout his career such traits of constancy, integrity, unwavering honesty, loyalty, industry and dedication to science, to his friends, to his institution, and to his adopted state that few will ever match his achievements,

NOW BE IT THEREFORE RESOLVED, that this statement of respect, honor and love be forever recorded in the archives of the University of Arkansas for Medical Sciences and of the State of Arkansas, and that a copy be sent to members of his family and to the Journal of the Arkansas Medical Society for the benefit of all those who have profited from his presence among us.

Approved by the Executive Committee, College of Medicine, June 26, 1985, on the eve of his change to Professor Emeritus within the University.

OBITUARY

DR. BARNETT P. (BARNEY) BRIGGS

Dr. Briggs from Little Rock died June 21, 1985. He was born on August 2, 1910, in Bowling Green, Kentucky. Dr. Briggs was graduated from the Vanderbilt University Medical School, Nashville, in 1935.

He began practicing in Little Rock in 1938 as the first board certified Pediatrician in the State. He retired from the practice of medicine in 1979. Dr. Briggs served with the Army Medical Corps during World War II. He was a member of the University of Arkansas College of Medicine staff from 1938 to 1942 and from 1946 to 1973. He was appointed clinical professor of Pediatrics at the University in 1973.

Dr. Briggs was one of the founders of the Head Start program in Little Rock and the rheumatic heart disease clinic of the Crippled Children's Division of the State Welfare Department. He had also served as president of the Little Rock Land Company from 1961 to 1967 and as board chairman in 1967.

Dr. Briggs is survived by his wife, Jo Dean Darling Briggs, Dr. Dale D. Briggs (his son), two other sons, a daughter, a stepson, and a stepdaughter.

Memorials may be made to the Doctors Hospital Auxiliary Oncology Wing or Hope Lodge, Post Office Box 7421, Little Rock 72217.

DR. JOHN C. FARIS

Dr. Faris of Jonesboro died June 29, 1985. He was born in Caruthersville, Missouri, on August 10, 1912.

His pre-medical and medical education were with the Washington University and the Washington University Medical School in St. Louis, Missouri. Dr. Faris served his internship at the University of Kansas Hospitals. He also served a residency in General Surgery from 1937 to 1940 and trained in Pathology from 1937 to 1938 at the same institution. While in training, he also served as an Associate Professor of Pharmacology from 1937 to 1938.

Dr. Faris served in World War II from 1942 to 1946 as a flight surgeon in the Army Air Corps. He retired from the Army Reserve in 1962.

He practiced in Jonesboro from 1946 to 1968 and moved to Texarkana in 1968 where he served as chief surgeon for the Cotton Belt Employees Hospital for three years. Dr. Faris then returned to Jonesboro.

Dr. Faris was college physician for Arkansas State University and designed the health center at ASU.

Dr. Faris is survived by his wife, Beryl Farris, and one daughter. Memorials may be made to the Alzheimers Research Program at St. Bernard's Regional Medical Center in Jonesboro.

DR. WOODROW E. PHIPPS, JR.

Dr. Phipps of North Little Rock died June 14, 1985. He was born March 4, 1913, in Holdenville, Oklahoma. He was graduated from Hendrix College in Conway in 1933 and from the University of Arkansas College of Medicine in 1937. His internship was with Baptist State Hospital in Little Rock.

He began practicing medicine in North Little

Rock in 1938. Dr. Phipps was a leader in the drive for construction of the Memorial Hospital; he served as chief of staff of the hospital in 1964.

Dr. Phipps served as a captain in the Army Medical Corps during World War II. He was a member of the Downtown Rotary Club 99 and the Civil Air Patrol.

He served on the North Little Rock School Board for seven years, as alderman in North Little Rock for sixteen years, as the North Little Rock city physician, and as a member of the Board of Trustees of Henderson State University.

Dr. Phipps is survived by his wife, Anita Morris Phipps, and one daughter.

DR. CLARK B. PROCTOR

Dr. Proctor of Little Rock died June 28, 1985. He was born February 19, 1903, in Ames, Iowa.

Dr. Proctor received his pre-medical education at Harvard University and the Iowa State University at Ames where he received his Bachelor of Science in Bacteriology in 1925. He was a 1932 graduate of the University of Iowa College of Medicine. His internship was with City Hospital in St. Louis, Missouri.

He served with the United States Air Force from July 1933 to September 1960; he was a Colonel at the time of his retirement.

Dr. Proctor was a staff physician at John L. McClellan Memorial Veterans Administration Hospital in North Little Rock for 15 years. He retired from the practice of medicine in 1976.

Dr. Proctor is survived by his wife, Roselle Littleton Proctor.

DR. PIERRE P. REDMAN

Dr. Redman of Mena died June 20, 1985. He was born February 2, 1898. He was graduated from the University of Arkansas College of Medicine in 1925.

Dr. Redman practiced medicine in Fort Smith from 1926 to 1937. He moved to Mena in 1939 and opened the Redman Hospital.

He is survived by his wife, Margery Reynolds Redman, and two sons.

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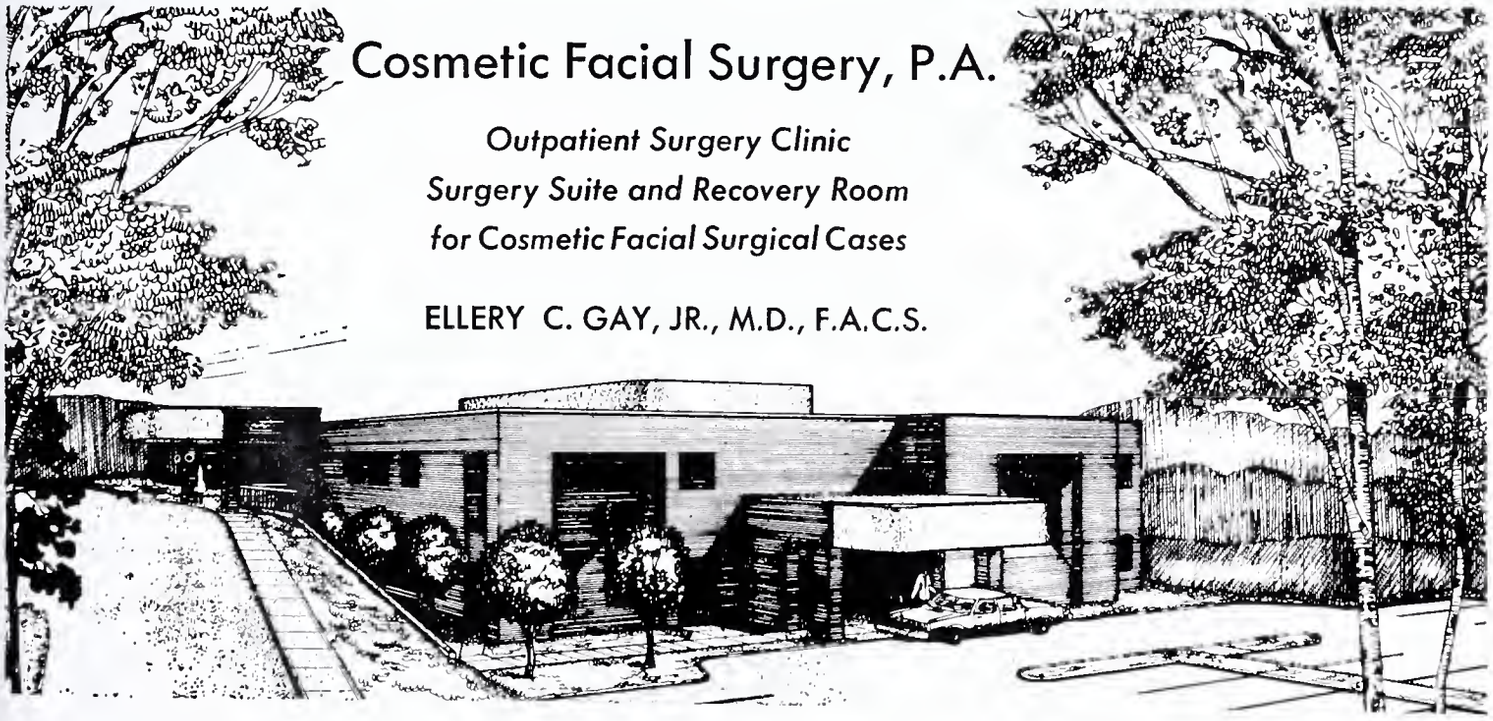
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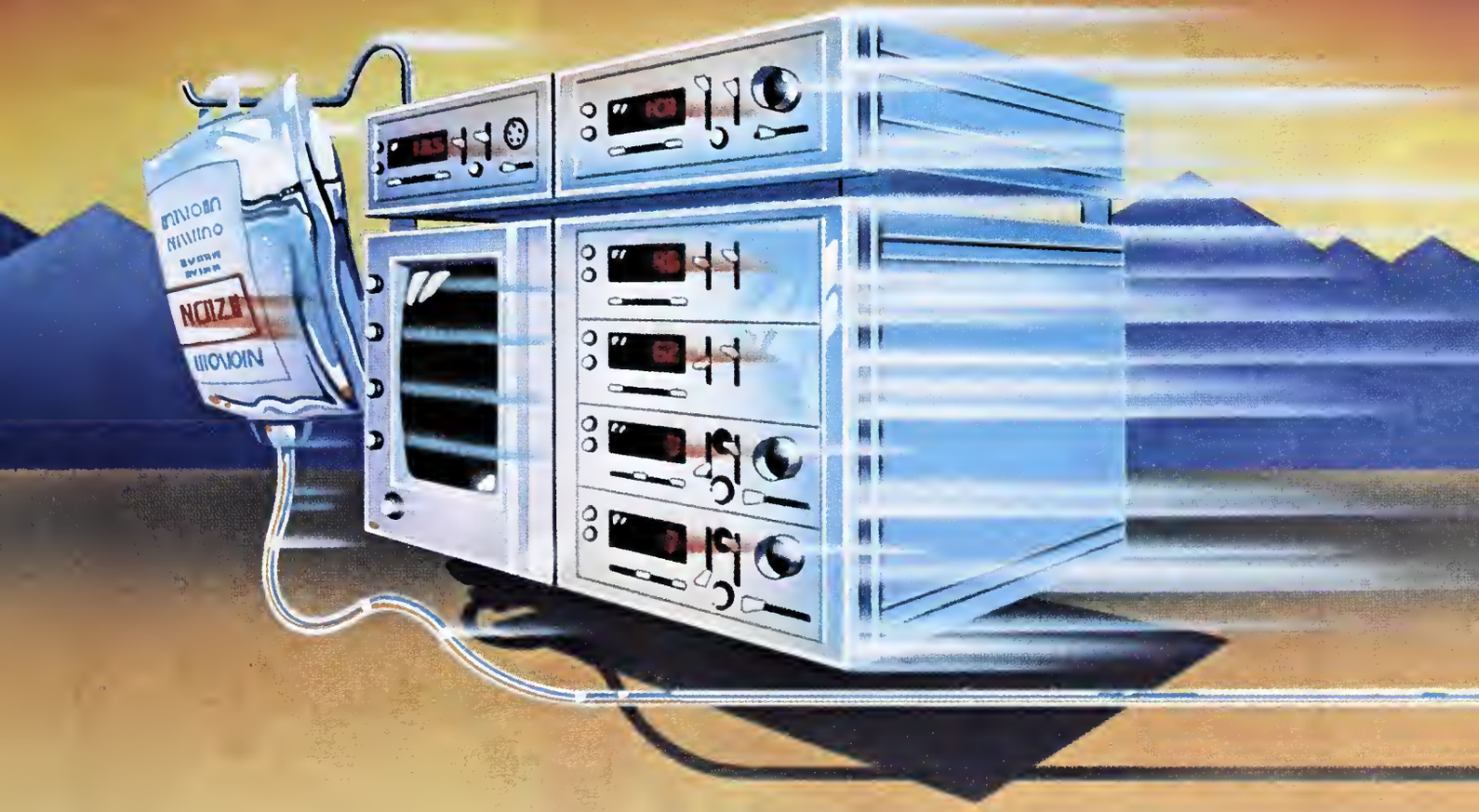
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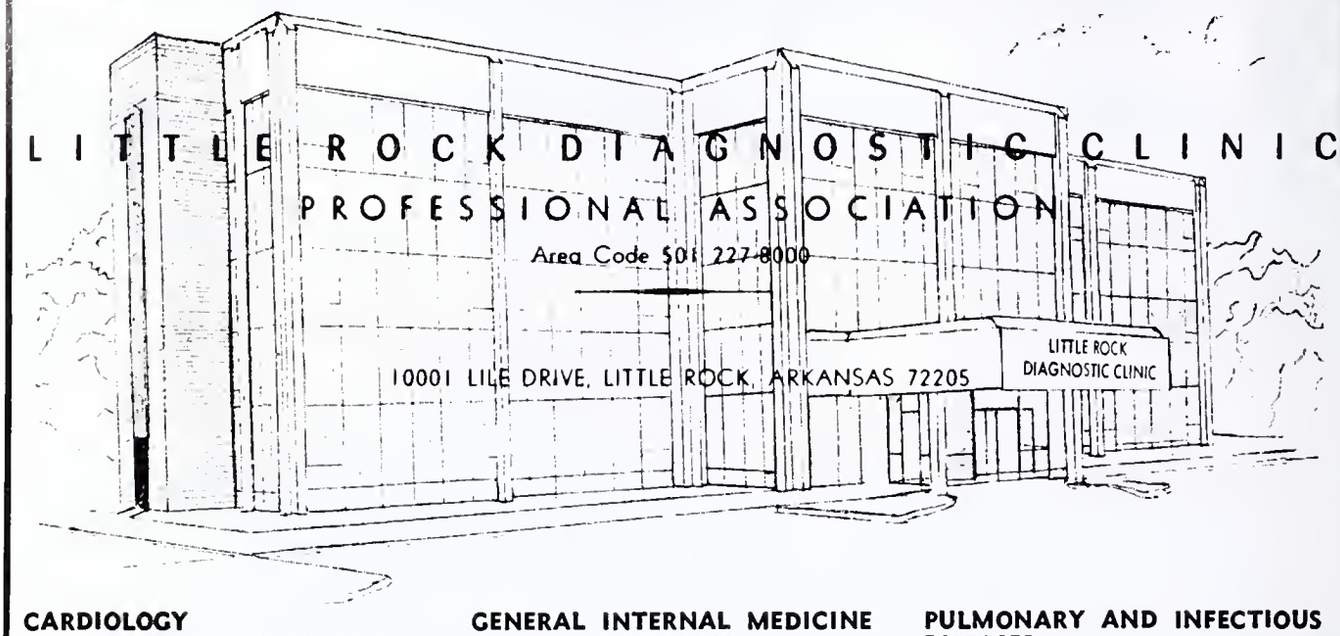
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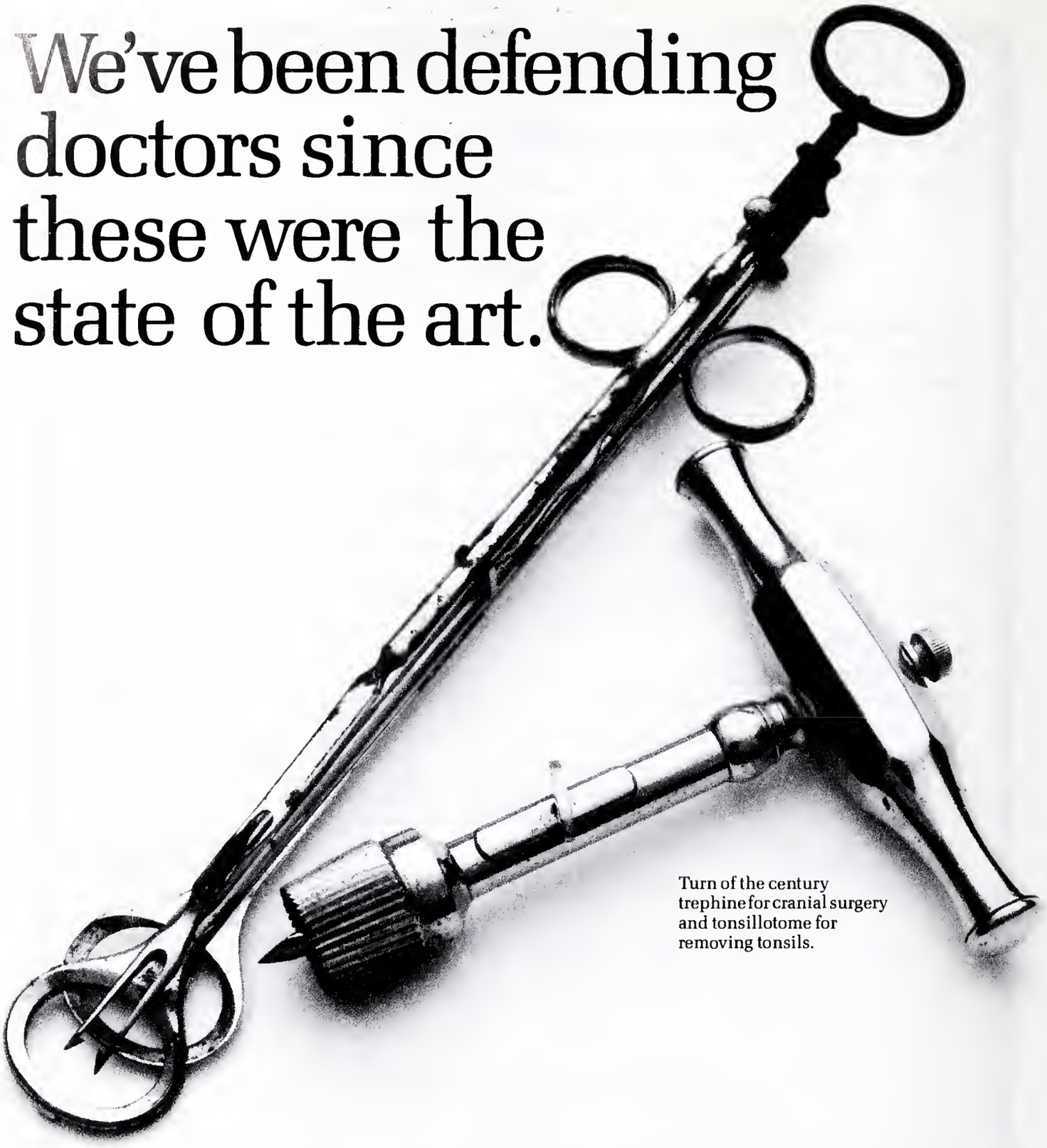
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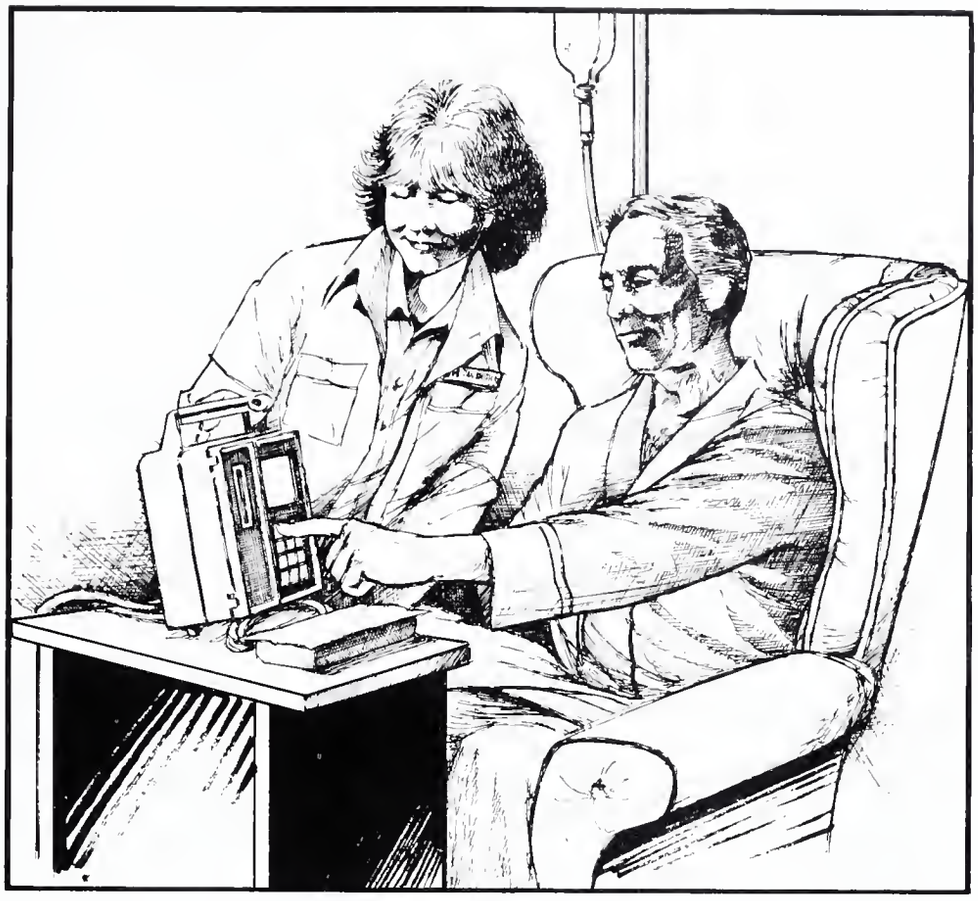
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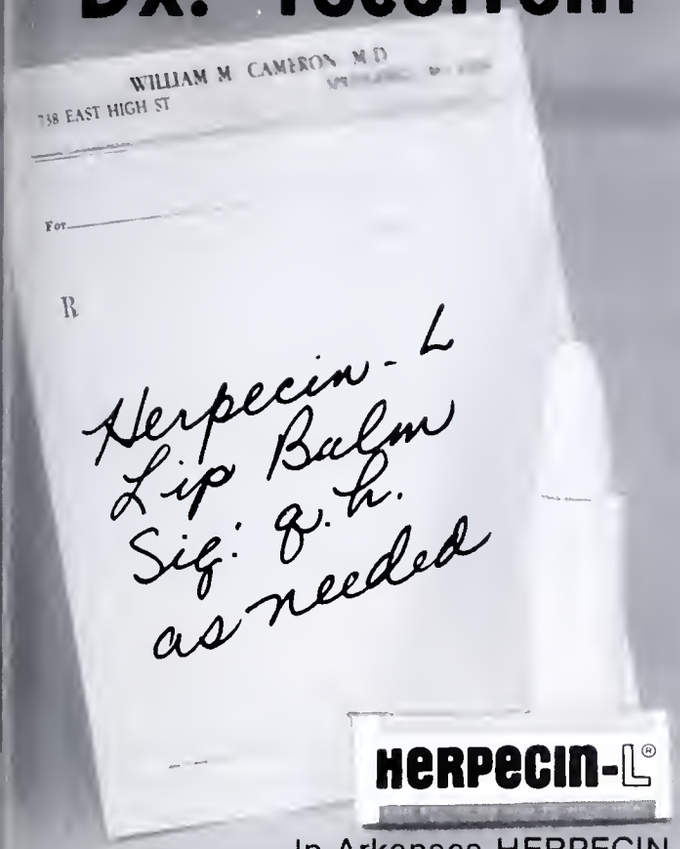
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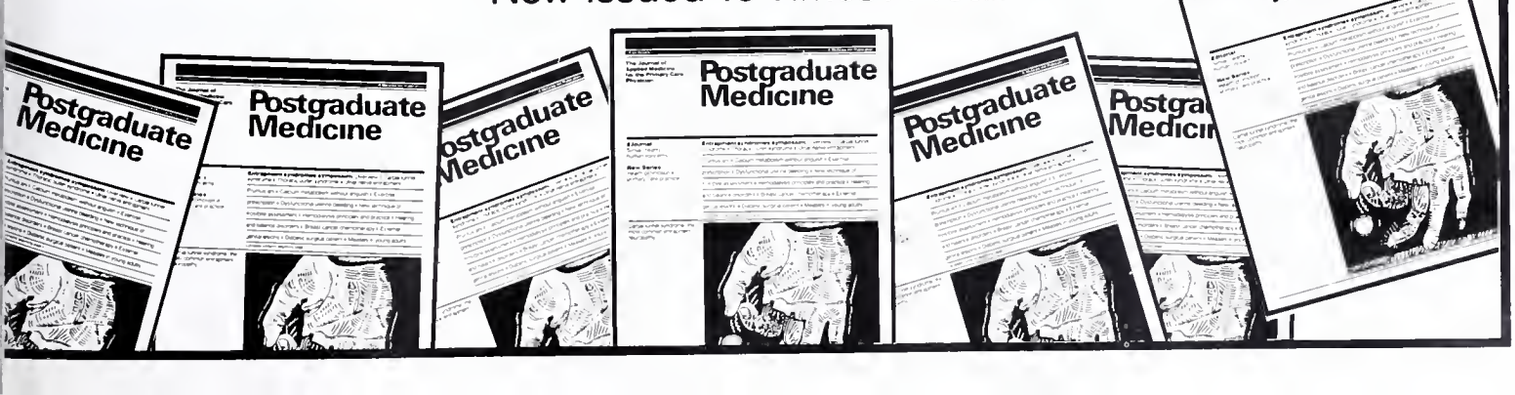
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The area is also in need of an internist. Office space is available and this practice opportunity includes a partial salary arrangement which will be explained on visitation. Blytheville currently has 26 practicing physicians and a 186 bed hospital. An expansion program is underway which will include a CT scanner, additional facilities and space needed for expansion in the nuclear medicine area as well as the radiology department.

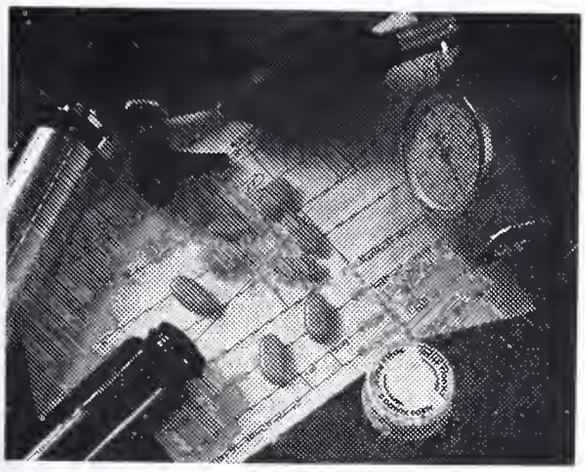
HORATIO. The opportunity exists for a family practitioner or general practitioner to establish a practice in Horatio. Located on State Highway 41 in southwest Arkansas, Horatio is 51 miles north of Texarkana and has a population of 1,000 with a service area population of 5,000-7,000.

Currently there are no physicians in Horatio. The community hospital of DeQueen is a 20 minute drive from Horatio. The 120-bed hospital is owned by Hospital Corporation of America. An extensive renovation of the emergency room and the addition of a CT scanner is approved and should be completed in one year.

SILOAM SPRINGS. Siloam Springs is located in the extreme northwest corner of the state. Population 8,000. Service area 60,000. Opportunities exist in obstetrics/gynecology and in orthopaedics. Financial arrangements are available depending on experience and education of the physician. A full service hospital offers a full range of ancillary services, including outpatient and home health care.

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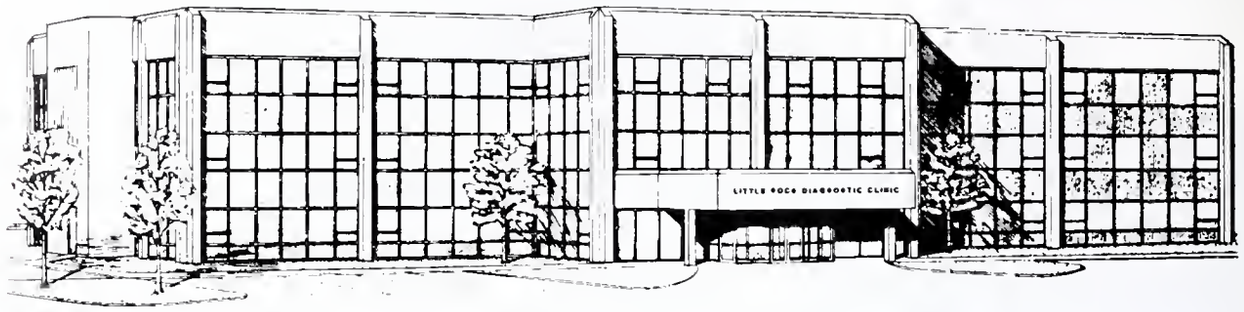
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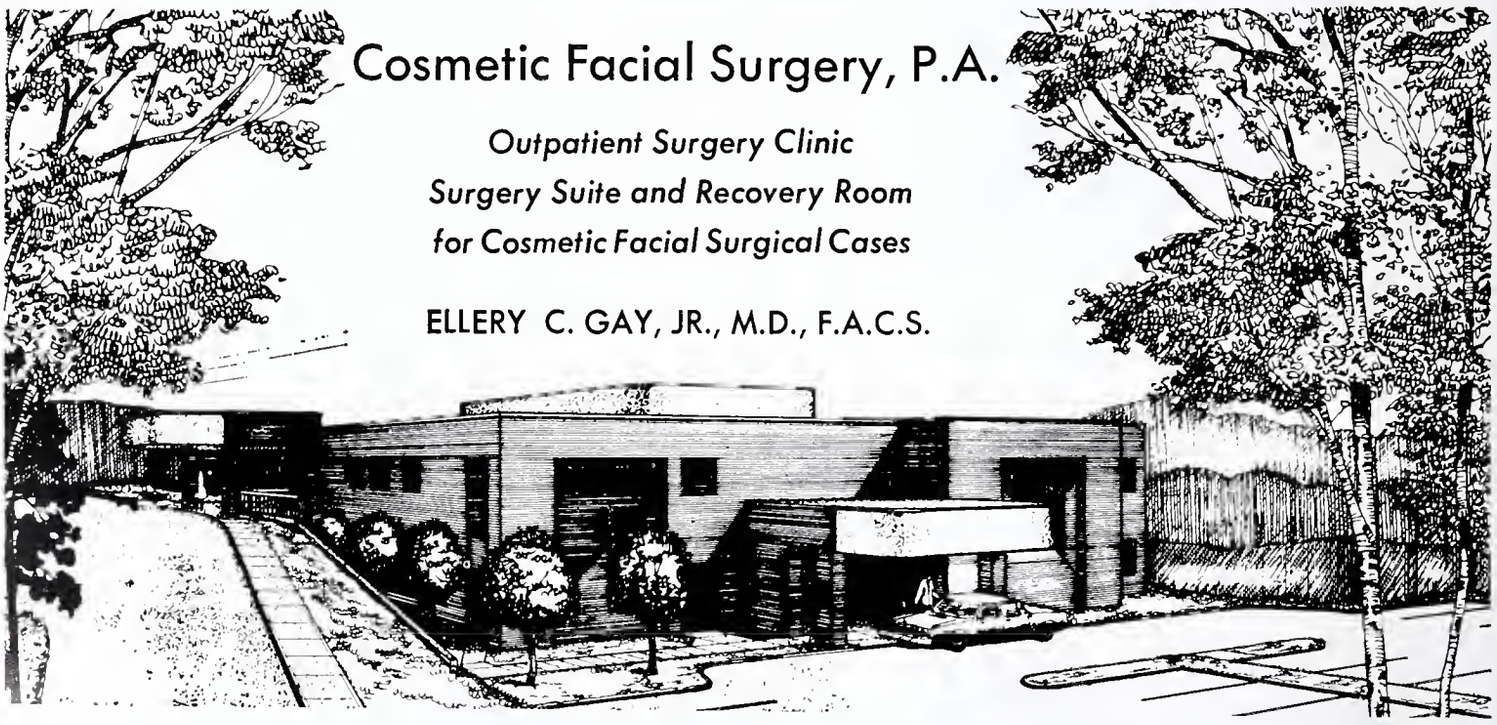
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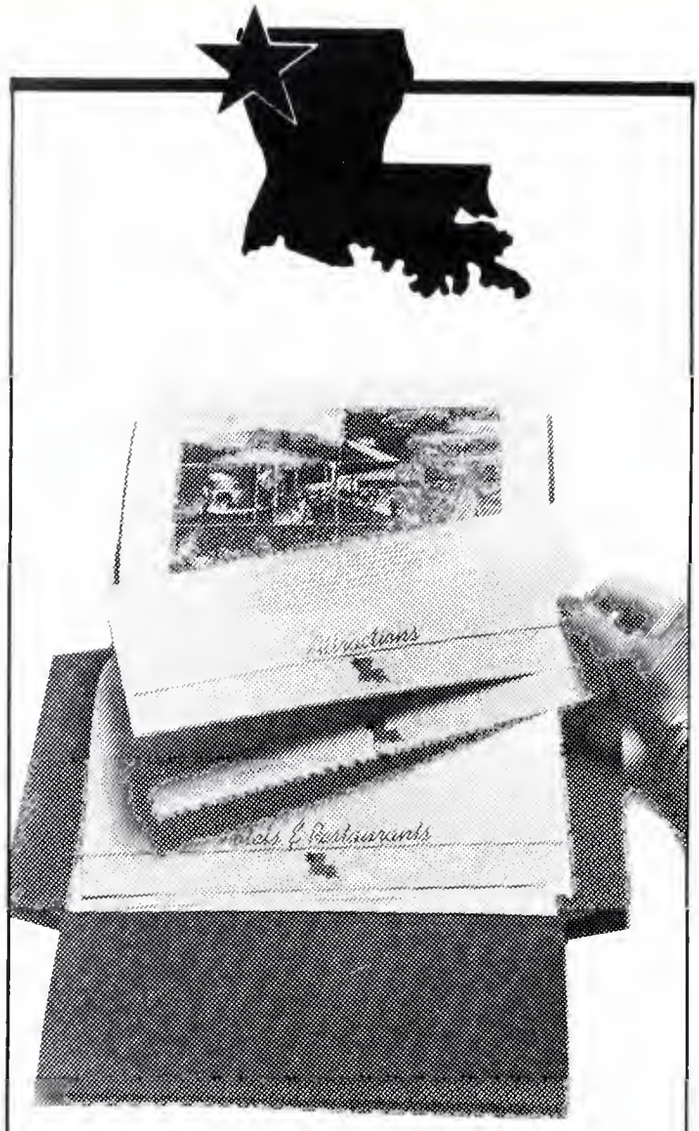
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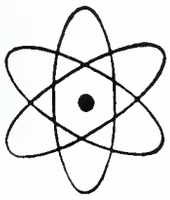
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Propranolol hydrochloride (INDERAL®):
Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide:
Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL®):
CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned, the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patients should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide:
Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL®):
GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease; elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide:
GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance: namely, hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs, irrespective of cause, are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS: Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL®):
Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia, congestive heart failure, intensification of AV block, hypotension, paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:
Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System: Dizziness, vertigo, paresthesias, headache, xanthopsia.

Hematologic: Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura, photosensitivity; rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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AHEC and Family Practice

David Busby, M.D.*

At its inception a major goal for the Area Health Education Center program in Arkansas was to train family physicians. Many factors led planners to that goal:

1) In the early 1970's anecdotal information suggested that fifty percent of residents establish or enter practice within seventy-five miles of the site of residency training. This implied that the medical manpower shortage could be reduced greatly by establishing five or six family practice residency programs in small cities across the state of Arkansas. Therefore, it became politically popular to fund family practice residency programs because of the shortage of physicians in Arkansas. This resulted in funding by the legislature of the state of Arkansas as well as start-up grants from the federal government.
2) Before the Area Health Education Center programs began, at least half of the medical graduates from the University of Arkansas College of Medicine had to leave Arkansas each year because there were not enough residency positions.
3) As the number of indigent patients decreased because of increased funding of third-party-pay programs, the University of Arkansas for Medical Sciences Hospital faced a shortage of patients to serve as teaching cases.
4) Increasing numbers of well-trained specialists and subspecialists were establishing practices in small cities throughout Arkansas, in Fort Smith, Fayetteville, Jonesboro, El Dorado, and Pine Bluff. These people were thought willing to serve as volunteer faculty members, possibly reducing the overall cost of training residents.
5) Residency trained family physicians were thought to be more willing to enter practice in rural Arkansas and, as family physicians, would be able to treat most problems encountered in these rural communities.

Family Practice educators believed that Family Practice training was, and is, important for additional reasons:

1) Well-trained residents would feel more secure practicing in rural areas. This would reduce the number of moves by young physicians as they search for an ideal practice location.
2) By including practice management in the curriculum residents could more efficiently, perhaps more economically, serve the public by using modern management techniques in their practices.
3) With the emphasis on a proper blend of the traditional medical sciences and behavorial sciences, the risk of physician impairment could be reduced. By stressing "the family" in Family Practice, the physician's family would be stronger with less chance for breakup.
4) Residents active in continuing medical education during their training would be more likely to continue their quest for knowledge after establishing a practice.
5) Residents trained with an emphasis on patient education and preventive health measures would be more likely to strive for prevention rather than procedure oriented intervention.

The Fort Smith Area Health Education Center Family Practice Residency began in 1975. Thirty-one physicians have completed their three years of training and are in practice. To assess the success of this residency program, a written survey of graduates in practice for more than one year was conducted. Of the twenty-five surveyed, twenty-one responded, a response rate of ninety percent. Information was then gathered from the 1984 graduating class of residents so that a more complete review could be made.

*Former Director, Family Practice Area Health Education Center, 100 South 14th Street, Fort Smith, Arkansas 72901-3892.

Twelve of the thirty-one graduates have remained in Fort Smith to practice and two others are in practice in rural communities within fifty miles of Fort Smith. Eleven graduates are practicing more than fifty miles from Fort Smith in the state of Arkansas. One additional graduate is in the Navy and assigned to Italy. Five other graduates left Arkansas to practice. Of the eleven graduates to enter the program from medical schools other than the University of Arkansas, only four left Arkansas after completion of their residency training (Louisiana, Texas, Kansas, Missouri). Only one graduate from the University of Arkansas left the state (Montana).

The graduates surveyed averaged fifty-five hours of continuing medical education each year, see thirty-one patients per day in their office, have a daily hospital census of five patients, deliver six babies per month, have a ninety percent collection rate and report the average age of their patients to be thirty-eight years. Ninety percent are members of the American Academy of Family Physicians, seventy-six percent are members of the local county medical society, sixty-seven percent are members of the Arkansas Medical Society, but only fifty-seven percent belong to the American Medical Association.

TABLE I
Graduates In Practice More Than One (1) Year

CME hours per year	55
Average number of daily office visits	31
Average daily hospital census	5
Number of graduates including OB in their practice	20
Number of deliveries per month (those doing OB)	6
Average age of patients	38
Monthly collection rate	90%

Most graduates are practicing in the smaller cities and towns of Arkansas. Table II lists the number of physicians practicing in towns of varying size.

TABLE II
Population of Towns/Cities Where Graduates Practice In Arkansas

Less than 10,000	4
10,000-15,000	7
15,000-25,000	2
25,000-75,000	12
75,000-up	0

The types of practice arrangements are listed in Table III and include all the current forms of associations.

TABLE III
Types of Practice Arrangement (Those In Traditional Family Medicine — Excludes ER, Military, and Academic Medicine)

Solo	8
Partnership	7
Group (more than 3)	7
Multispecialty clinic	3

Table IV lists the type of practices of the graduating residents reflecting that the majority enter the practice for which they prepared.

TABLE IV
Type of Practice of Graduates (All 31)

Traditional Family Medicine	25
Emergency Medicine	3
Free Standing Emergency Clinic	1
Military Service	1
Academic Medicine	1

All graduates (30) taking the American Board of Family Practice certification examination have passed. The lowest individual board score was at the fortieth percentile. The average for the program is at the forty-ninth percentile. There is no statistical correlation between residents' assessment of the strengths of the program and board performance. Residents surveyed were asked to list the strengths of the various portions of the Family Practice training on a scale from zero to ten. Pediatrics was the highest listed at 8.4, while the pediatric component of the board exam was at the fiftieth percentile. The lowest evaluation was from surgery at 6.8. The board performance, however, was at the fifty-second percentile.

Many residents in the early years of the program left without completing the three-year program. Many of those are now practicing in rural areas—town of populations of 1,424; 2,756; 3,621; 4,587; 5,237; 15,214. Five former residents left for other specialty training: Obstetrics—1, Internal Medicine—1, Psychiatry—1, Plastic Surgery—1, and Pediatrics—1. At present no graduates, after establishing their practice, have moved from that town.

The annual cost of training a Family Practice resident was reported in a recent study performed by the Family Practice Department at the University of Oklahoma to be almost $80,000.00 per year. The actual cost of training in Family Practice residents at the Fort Smith Family Practice

Residency is now $77,000.00 per resident per year.

TABLE V

Total Cost of Training for One (1) Resident Per Year

National Average	$79,347.00
Fort Smith Residency	$77,005.00

Therefore, the cost of training at the AHEC Family Practice residency in Fort Smith represents only a very slight saving.

In summary, many of the goals of the AHEC Program can, and are, being met as most residency graduates establish practice in the smaller cities and towns of Arkansas. These are physicians who are active in continuing medical education, practice comprehensive family medicine, see a reasonable number of patients daily in their office, and are successful in the daily management of their practice.

Pneumatic Anti-shock Garment Risks and Rewards

Kimball I. Maull, M.D., FACS*

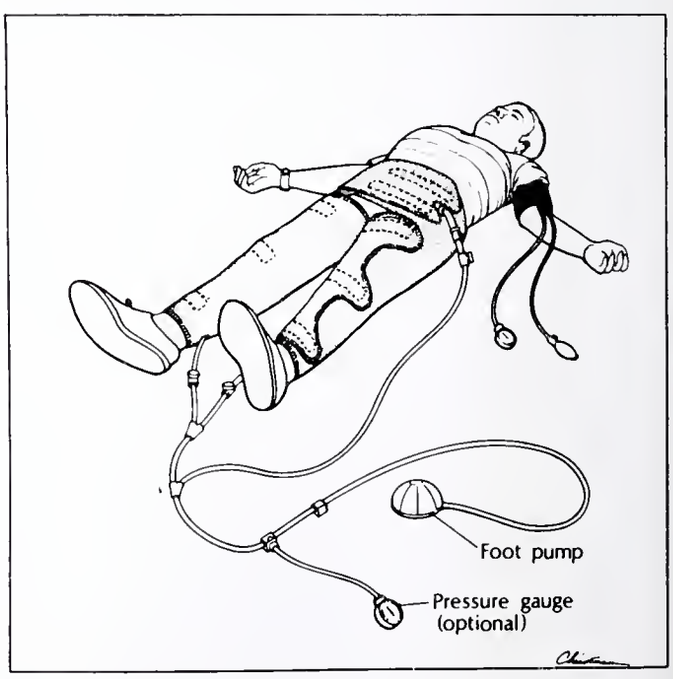
Trauma is no longer the "neglected disease of modern society."[1] During the past decade, improved care of the trauma patient has been a major focus for prehospital care providers, emergency physicians, and surgeons. In 1984, Trunkey described the trimodal distribution of trauma deaths, reinforcing previous studies which noted that, following injury: (1) immediate fatalities, occurring within minutes of the event, were generally related to injury severity and would not respond to changes in trauma care system design; (2) early deaths occurred within 1-2 hours of injury because of inappropriate care or delay in rendering appropriate care; (3) late deaths occurred 2-3 weeks postinjury usually related to multisystem failure and/or sepsis.[2] In order to reduce the early deaths and their resultant morbidity, regionalization of trauma care was promoted, trauma care systems were designed and implemented, and new methodologies were developed. The pneumatic anti-shock garment represents a relatively new methodology and is the subject of this report.

If a patient dies at the scene of a motor vehicle crash, it is likely to be caused by acute ventilatory impairment, exsanguination, a major head injury or a combination thereof. If the severely injured patient survives to reach a medical care facility, and the patient arrives in shock it is often the skill of the physician and his support staff that determines patient survival. Recognition of the benefits of the early reversal of shock is not a new concept. The pneumatic anti-shock garment (PASG) is currently regarded by many as the first line of therapy in the field management of hemorrhagic shock. However, utilization of the pneumatic anti-shock garment, it's widespread implementation and mandate by prehospital protocol, and it's acceptance as definitive therapy for certain inhospital clinical problems have occurred without valid studies on efficacy or safety of operation. What follows is a critical review of what is known and what remains to be confirmed about the pneumatic anti-shock garment principally as it applies to the management of hypovolemic shock in the injured. Application of the PASG in other clinical situations is noted where appropriate.

*Department of Surgery, University of Tennessee Memorial Research Center and Hospital, Knoxville, Tennessee 37920.
Reprint requests—Department of Surgery, University of Tennessee Memorial Research Center and Hospital, 1924 Alcoa Highway, Knoxville, Tennessee 37920.

Historical Perspective

The use of external counterpressure was first described by Crile in 1903.[3] He successfully used a rubber suit in hypotensive surgical patients but noted that the suit was prone to leakage. In 1909, Crile described the use of external counterpressure in a patient with a neck laceration and an unrecordable blood pressure. Application of the device maintained the blood pressure at 110 mm Hg for 12 hours. External counterpressure fell into disuse as safe methods of intravenous replacement were developed and the concept was largely forgotten until the 1940's when the military developed the "G-suit" which was utilized by airplane pilots to prevent blackouts and retinal hemorrhage. In 1956, Gardner and Dohn adapted the G-suit for use in neurosurgical patients operated on in the sitting position.[4] Gardner later used the device in a postpartum patient who required massive blood transfusions and had two unsuccessful surgical attempts to control hemorrhage. Following application of the device, the patient's blood requirement was reduced to near zero. In 1964, Campbell developed a pneumatic envelope to prevent cardiac collapse that occurred in elderly patients undergoing resection of abdomi-



Schematic representation of pneumatic anti-shock garment applied to patient and demonstrating in-line pressure gauge and foot pump for inflation.

nal aortic aneurysm.[5] He studied the device first in dogs and later demonstrated the device's effectiveness in 31 vascular patients.

In 1973, Kaplan and Civetta utilized the PASG in the prehospital emergency setting and recorded the normalization of blood pressure in 7 of 8 patients with unrecordable blood pressures who were treated with PASG application.[6] Their report was closely followed by a compilation of the military experience in Viet Nam by Cutler and Daggett who regarded the PASG as a major advance in the care of battlefield casualties and the most effective form of shock resuscitation.[7] McSwain promulgated the use of the PASG in prehospital care in the mid 70's and widespread field use followed.

Mechanism of Action

There is general agreement that the application and inflation of the PASG results in an elevation of blood pressure and improved perfusion to the heart, lungs, and brain. The PASG is also widely accepted as an effective splinting device for fractures of the lower extremity and pelvis. There is also good evidence both experimentally and clinically that application of the device lessens bleeding from lacerated arteries and veins that lie beneath the garment. Yet, there is considerable debate regarding the exact mechanism of action of the PASG.

The PASG appears to exert a tamponade effect which is linearly related to inflation pressure. According to the Law of Leplace, which relates tension in the wall of a vessel directly to pressure across the vessel wall and the radius of the lumen, when the pressure outside the vessel is increased by circumferential pneumatic compression, the pressure gradient across the wall of the vessel is reduced. The radius of the vessel lumen is also decreased. This reduction in tension lessens the propensity for tears to gape. With the reduction in size of both traumatic vascular defects and, vessel diameter, flow is reduced and extravasation lessened.

Inflation of the PASG results in a certain redistribution of blood volume. This is clearly not as great as the 1-2 liters originally proposed, but it is felt to be on the order of 3-5 ml per kg, probably less in the already hypotensive patient. The splinting action of PASG inflation is self-evident. It is widely recognized by orthopedic surgeons that immobilization lessens bleeding and this action of the PASG is probably salutory in patients with pelvic and lower extremity fractures.

Several recent studies have demonstrated that the principal effect of the PASG is on afterload. Some investigators have demonstrated both a modest increase in central volume replenishment and a profound increase in total peripheral resistance, others only the latter. In swine, Bellamy et al. demonstrated a central translocation of venous blood of 3 mm per kg followed by a 41% increase in cardiac output and a 62% increase in aortic pressure.[8] Following hemorrhage, the same authors increased coronary perfusion by 50% and cerebral perfusion by one-third. In 1984, Holcroft confirmed both augmentation and impedance of venous return in normovolemic and hypovolemic baboons.[9] Beneficial effects on aortic pressure were noted while the cardiac index decreased.

Gaffney et al. demonstrated a profound increase in total peripheral resistance in his subjects.[10] Some authors consider that the discomfort of inflation may stimulate a pressor response, further elevating blood pressure and peripheral resistance. This nociceptive phenomenon has not been demontrated experimentally.

Controversies in Clinical Application

Low vs. High Inflation Pressures

When initially implemented in the field, gaugeless garments were recommended by McSwain who stressed that it was the patient's blood pressure, not the garment pressure, that was most important to monitor. More recently, certain investigators have related specific complications to inflation pressure and duration of application. At the same time others found that low inflation pressure (20-40 mm Hg) is not as effective in normalizing blood pressure as higher inflation pressure (60-80 mm Hg).[11] When initially applied, whatever pressure is needed to promote hemodynamic stability is most appropriate. However, if the garment is to remain on the patient for an extended period (greater than 2 hours), a gauged device should be used and inflation pressures kept in the lowest range consistent with the desired clinical response (Figure).

Limb Ischemia/Compartment Syndrome

In 1981, Maull et al. reported 2 patients who developed compartment syndrome following the long-term application of the PASG.[12] Both patients had pelvic fractures and associated lower extremity injuries. Following his initial observation, the same phenomenon was reported by other authors.[13] Compartment syndrome was also noted

in patients without lower extremity trauma.[14,15] There is little doubt but that the development of compartment syndrome and its resultant loss of limb is a real phenomenon. In 1984, Godbout et al. reported severe muscle necrosis within hours of PASG application with a fatal outcome.[16] In patients with lower extremity trauma, inflation pressure and inflation duration should be minimized.

Effects on Pulmonary Function

The early use of the "G-suit" raised concern about impairment of ventilatory function. The G-suit was a single chambered device which came up to and included the xyphoid. The development of the pneumatic anti-shock garment, a three chambered device where the cephalad extension of the abdominal compartment impinges only on the lower costal margin, has lessened the effects on ventilatory mechanics. McCabe et al. showed that vital capacity was not significantly affected using the current PASG even at high inflation pressures.[17] In recent experimental work in swine, Maull et al. demonstrated an inverse relationship between inflation pressure and tidal volume.[18] Changes in arterial blood gases tended toward respiratory acidosis. The data in this area remain controversial. However, if the patient requires intubation, these effects are easily reversible with adequate positive pressure ventilation.

Effects on Intracranial Pressure (ICP)

In the late 1970's, head injury was considered a contraindication to the use of external counterpressure because of the fear of elevating intracranial pressure. Recent studies in dogs by Palafox showed minimal elevation of ICP in response to PASG inflation[19] Other investigators showed no effect of PASG inflation on dogs with experimentally induced epidural mass lesions. In 1984, Gardner et al. reported a prospective study of 12 patients with severe head injury but with normal ICP's. Following sequential PASG inflation, there was a minimal rise in the ICP but a greater rise in the systemic arterial blood pressure resulting in improvement in the cerebral perfusion pressure. Currently, it is recommended that the PASG be used in patients with head injury who are in shock. Further study is needed to determine the safety of the device in head injured patients with elevated ICP's.

Effects on Renal Function

Because the kidneys lie beneath the area of compression of the PASG abdominal compartment, there has been some concern regarding potentially deleterious effects on renal function. Shenasky and Gilleuwater in 1972 showed a decrease in renal perfusion and urine output.[22] More recently, Begin et al. reported no instances of renal failure in 47 patients managed with PASG.[23] The incidence of renal failure in Wayne's retrospective study of 821 PASG—treated patients was less than 1%.[24] Thus, at this point, there is no definite cause and effect relationship between PASG inflation and renal failure.

Effects on Acid-base Balance

Wangensteen et al. noted in the experimental animal that the group of PASG treated dogs had more rapid and severe metabolic acidosis than those dogs in which PASG was omitted.[25] Ransom and McSwain confirmed this finding in dogs and noted that the acidosis was greater with higher inflation pressures.[26] In Wayne's series, tendency toward acidosis was noted but it was not severe and could be readily controlled with ventilation and perfusion. It appears appropriate at this time to recommend the close monitoring of pH, especially in those patients with sustained PASG inflation, and specifically when the garment is deflated.

Does External Counterpressure Improve Survival?

Two recent reviews of field PASG use have questioned the effectiveness of the device in prehospital shock management. Both studies were urban in setting. (Mackersie et al. in San Francisco[27] and Bickell et al. in Houston[28]). In both studies, no statistically significant improvement in trauma score could be demonstrated for those patients primarily managed by PASG inflation in the field compared to patients treated without PASG. Interestingly, in both studies, the use of the PASG did not result in any delay in field treatment or evacuation time to the hospital. Utilization of changes in trauma score may or may not be valid in determining a beneficial effect of prehospital PASG usage. Until further information regarding patient outcome is coupled with the field use of PASG and the results are determined in a non-urban environment, this question will probably remain both unanswered and misrepresented by those who wish to argue either side of the issue.

Contraindications to PASG Use

Cardiogenic shock with pulmonary edema is an accepted contraindication to the use of the pneumatic anti-shock garment. The use of the PASG should be modified in pregnant patients, those

suffering impalement injuries to the abdomen, and in the patient who has eviscerated. In such instances, inflation should be restricted to the lower extremity compartments only. The use of the PASG in patients with tension pneumothorax and pericardial tamponade remains controversial. Davis et al. produced tamponade in dogs subjected to PASG inflation.[29] An elevation in pericardial sac pressure occurred but mean arterial pressure and cardiac output also increased. At the very least, the PASG should be used with caution in patients with these two conditions and early definitive management of both should be instituted.

Maull et al. observed a uniformly fatal outcome in swine with diaphragmatic laceration treated with PASG inflation. Paradoxically, the blood pressure remained stable until the animals were near terminal, suggesting that this may be a major pitfall in the use of the device. At this time, known diaphragmatic laceration should be considered a contraindication to the use of the device.

Application and Deflation

Garment inflation should be systematic beginning with the legs followed by the abdominal compartment. Prior to inflation, the area underlying the garment should be quickly inspected and, if the clothes are left on, sharp instruments such as keys, pocket knives, etc. should be removed. If gauges are present, each lower extremity should be inflated to 30 mm Hg and then the abdomen inflated to a similar pressure. The patient's blood pressure should be monitored closely and, in general terms, the minimal pressure resulting in the desired clinical response should be used. Close monitoring of both patient pressure and garment pressure is indicated until such time as definitive therapy can be instituted.

Deflation of the garment is fraught with danger. Rapid deflation may cause a profound drop in peripheral resistance, irreversible shock and death. The slow sequential deflation of the abdominal compartment followed by the leg compartments is indicated only after volume replenishment has begun and is carefully titrated. In certain instances of known intraabdominal or vascular trauma, deflation is best delayed until the patient is in the operating room under anesthesia and prepared for definitive surgical intervention.

Summary

The pneumatic anti-shock garment is a prompt and effective method to improve perfusion to the heart, lung, and brain in selected patients in shock. The PASG reduces blood loss when the site of hemorrhage is beneath the garment and is an effective form of splinting for unstable pelvic and lower extremity fractures. The PASG also is an effective method to promptly elevate peripheral resistance, an effect that is readily reversible by deflation. Complications are infrequent and generally related to improper application, use, or removal of the device. Benefits of field PASG use in urban settings have recently been questioned and further studies are warranted.

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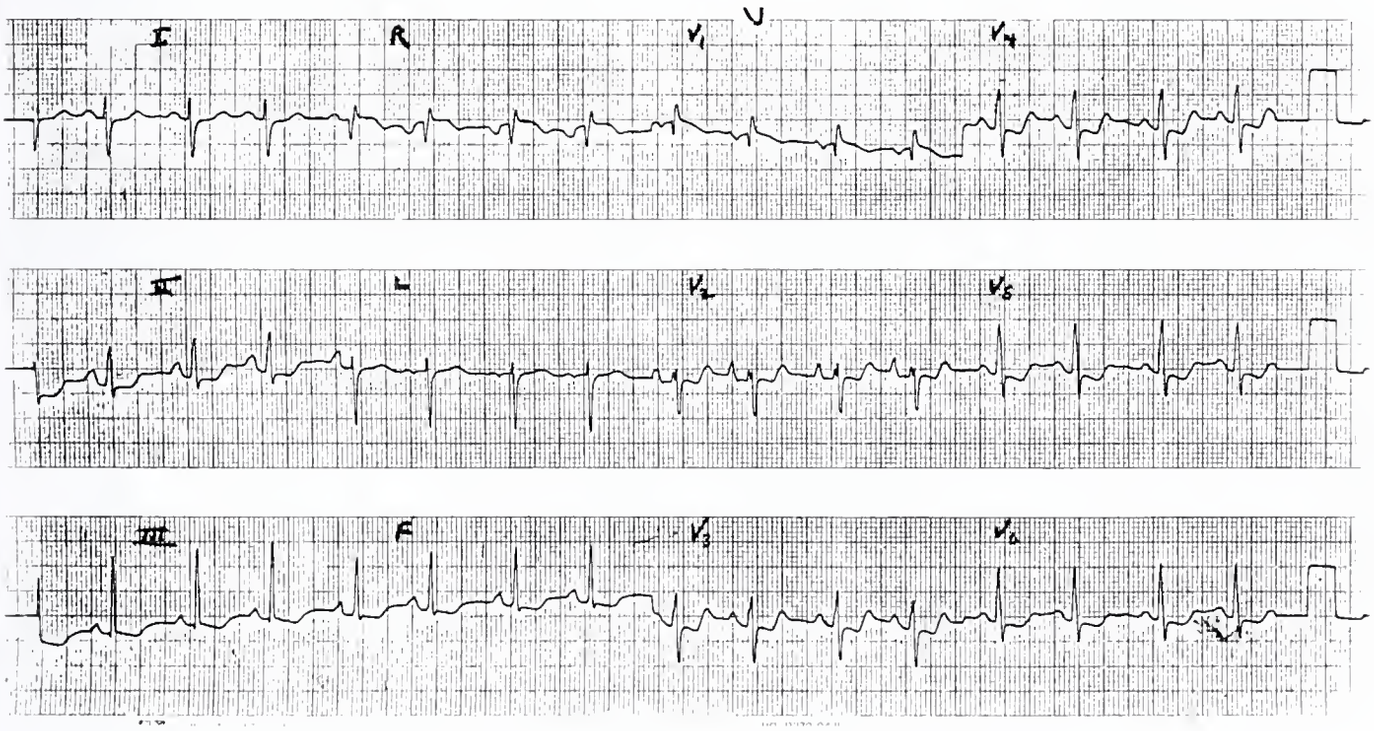
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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 195)

HISTORY: M. E. is a 40-year-old white woman presenting because of exercise intolerance, cyanosis, hemoptysis, and edema of her legs. Her cardiac examination reveals a left parasternal impulse, fixed splitting of S_2, and a grade 2/6 systolic ejection murmur as well as a grade 2/6 diastolic murmur. Her ECG is shown. What is your impression as to the patient's differential diagnosis, based upon the history, physical, and ECG?



John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

Three-Wheelers — Unsafe?

H. Austin Grimes, M.D.*

There has been a spate of articles in the media recently regarding the relatively unsafe three-wheel vehicles that are on the increase in numbers and usage throughout the United States. It is estimated there will be 2.5 million of these vehicles in operation by 1986. The present trend of accidents has climbed proportionately with the increased number of three-wheelers and many causes have been incriminated. One hundred sixty-one deaths occurred from 1982 through 1984 and there have already been twenty-four deaths for the first four months of 1985. One fourth of the fatalities involved children *under* twelve years of age.

There are no sure cures for accidents, but one suggestion has been to ban the vehicles altogether. This undoubtedly will not come to pass but stricter enforcement of existing laws regarding city street and country road use of these vehicles would help. We physicians should use our influence with city and county authorities to encourage enforcement.

Other recommendations by the Consumer Product Safety Commission is driver education, which we feel, should have high priority. A vehicle should not be sold without a thorough driver education indoctrination period. This should include all members of the family when possible. Close supervision of the under twelve age group may have prevented most of the accidents. The All Terrain Vehicle industry hopes to provide training for 42,000 ATV operators but out of 2.5 million vehicles that is grossly inadequate.

A minimum age for the driver of the ATV, perhaps twelve or thirteen years of age, when enforced, would be helpful in reducing the accidents in this group.

Mandatory use of helmets and restriction of carrying passengers are other suggestions for reducing the injury-death rate.

ATV accidents are a preventable disease and we should gear up our efforts to effectively reduce the number of accidents associated with this activity.

Three-wheelers are obviously not the only unsafe vehicle in operation in our country, bicycles, motorcycles, etc., but they are deceptively harmless looking and as such invite a lack of respect for their potential as a danger to the careless or inexperienced operator.

A state newspaper published the address and phone number of the State Consumer Product Safety Commission. Designee is Jerry Hill, 4815 West Markham Street, Little Rock, Arkansas 72205-3687, (501) 661-2574. Contact him if you have any suggestions for helping this problem of ATV's.

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*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.



Training for Public Health Professionals: Diagnosis and Cure

Sue W. Campbell, B.S.,* Anita Gottlieb, B.S.N., R.N.P.,** and Marilyn Dunavant, R.S.***

Training is a vital function of the most successful companies in today's work world, whether public or private. The Arkansas Department of Health is no exception. In fact, the Arkansas Department of Health (ADH) takes pride in designating training as an essential element of its total management scheme. The Agency is demonstrating that the development of its human resources is critical to its ultimate success in protecting and promoting the public health.

Training at the Health Department can be classified into two general areas—professional in-service and human resource development. These are the responsibilities of different entities within the Agency. Professional training in nursing, sanitarian and engineering services is the responsibility of the appropriate professional Agency division, which recommends, coordinates, presents or oversees that training. Human resource development used to be an ad hoc activity. It is now the responsibility of a newly-appointed Agency Training Committee. What brought this attention to human resource development and what does the new Agency Training Plan look like?

Need for ADH Training

On every working day of the year, the mail brings brochures advertising public workshops in a variety of communication skill-building or management subjects. However, these public workshops come with both a high price tag and an uncertain level of quality. For years, various divisions within the Health Department planned, coordinated and funded training activities for their own staff. Sometimes, a division would take advantage of public workshops. On other occasions, they would bring a speaker into the Agency for an in-house seminar. Sometimes, a manager would grant a request from a staff member to attend classes (for a fee) offered by the Inter-Agency Training Program for State Employees, a training consortium that is coordinated by the Office of Personnel, Department of Finance and Administration. Like other public workshops, the Inter-Agency programs are general in nature, using case studies and citing examples sometimes far removed from the management world of the Health Department.

Agency management began to ask hard questions about these ad hoc training activities. Were the Agency's training dollars being spent on training that was most needed? Were appropriate people being afforded appropriate training? Could the Agency's in-house seminars be coordinated so that more staff could take advantage of those workshops? Could the Agency's training be managed in a more cost-effective manner? Would it be feasible to establish a central clearinghouse of training information and expertise? Would computerization aid the accessibility of staff training records? In the summer of 1984, Health Department directors moved to assure positive answers to these questions.

Agency Training Committee

ADH management created the Agency Training Committee in June 1984. Each of the five bureau directors appointed to it at least one trainer to represent his/her bureau. The Committee was created not to diminish the individual manager's role in planning for staff training, but to complement that role. It provides liaison between bureaus, facilitates scheduling of training, eliminates course duplication, and offers low-cost

*Program Consultant, Arkansas Department of Health.
**Inservice Director, Arkansas Department of Health.
***Staff Development Coordinator, Arkansas Department of Health.

but high-quality in-house seminars to the Agency's statewide staff.

Training Needs Survey

The first task undertaken by the Training Committee was to determine the training needs/wants that existed Agency-wide. This was accomplished by a Needs Survey of 180 managers both in the Central Office and in all eleven geographical management areas. The survey tool asked these managers whether they sensed a need for training in any of 33 subject areas, ranging from standard supervisory subjects to communication areas. The managers were asked to indicate if this need existed for themselves, for their management and professional staff, for their support staff or for the Agency as a whole. ADH managers responded with a gratifying 61% survey return.

Committee members supplemented this survey tool with interviews of many of the same managers covered by the survey. They also had at their disposal two other training needs surveys conducted of smaller groups of managers during past years.

Survey Results/Selection of Courses

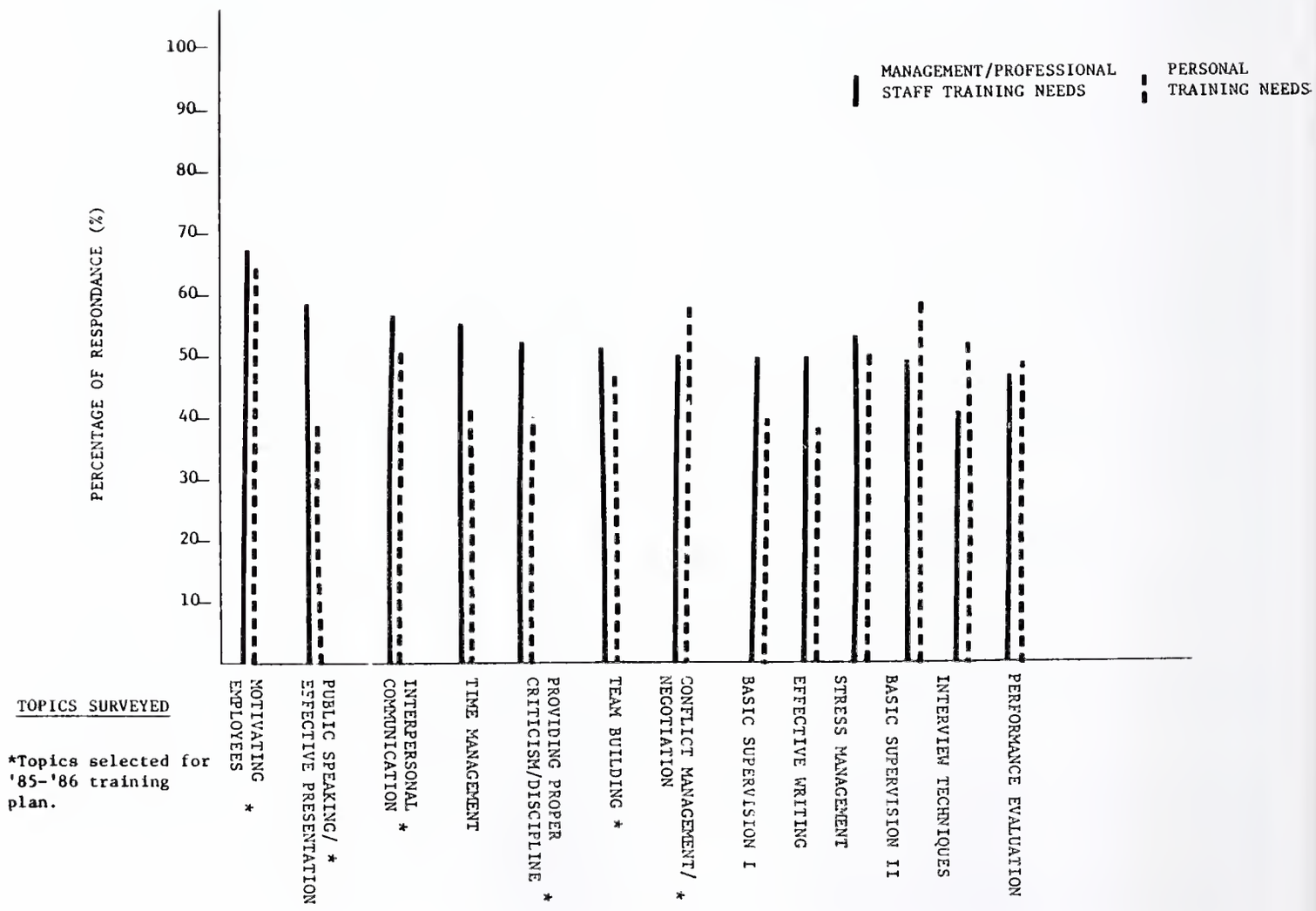
The results of the Committee's survey and interviews followed closely the results of other needs survey.

The top seven courses in preference by managers for themselves and for their management and professional staff were:

—Motivating Employees
—Public Speaking/Effective Presentations
—Interpersonal Communication
—Time Management
—Providing Proper Criticism/Discipline
—Team Building
—Conflict Management/Negotiation

Workshops in Time Management had been recently offered to a number of ADH staff; so the Agency selected the other six topics to comprise its offering of 1985/1986 Agency-sponsored seminars. In addition, already-available courses by

MANAGERS SURVEY RESULTS: ADH TRAINING NEEDS



Agency trainers in Cardiopulmonary Resuscitation, Telephone Techniques, and Effective Letter Writing would be offered on a regular basis.

1985/1986 Training Plan

The current training plan designed for the Agency includes the following:

—"How to Work with People" . . . 1 session
—"Conflict Resolution" . . . 13 sessions across the state
—"Team Building" . . . 5 sessions across the state
—"Increasing Productivity through Positive Reinforcement" . . . 1 session (to be videotaped)
—"Presentation and Persuasion for Professionals" . . . 3 sessions
—"Building Professional Communication Skills" . . . 1 session

In addition to these seminars for general audiences (as well as the CPR, writing, and telephone techniques courses mentioned above) the Agency Training Committee will make available to managers upon request a variety of workshops for individual work groups. Using copyrighted training package materials from a variety of national firms, and employing the facilitation services of Agency trainers, these courses will be made available starting in the fall of 1985. ADH managers can choose for themselves or their staff such topics as leadership techniques, career development and visual data accuracy.

Cost Effectiveness

The Agency Training Committee succeeded beyond its wildest dreams in fulfilling its charge to provide training in a cost-effective manner. The general ADH Training Plan for the six calendar quarters beginning Winter 1985 provides for management, communication and/or skills training experiences for a total of over *1500* staff members at an average cost of only *$15.00* a person!

Benefits to Individual and Agency

Cost-effectiveness is not the only benefit to occur with this new training plan. Because it now has the capacity for centralized and permanent training record-keeping and strict oversight of the training function, the Agency is now able to offer Continuing Education Units (CEUs) for courses sponsored by the Agency. This capacity is a boon for ADH health professionals who are required by the professional groups and/or by state licensing laws to obtain a certain number of CEUs every year. The Agency's record-keeping system is now being computerized, and in the near future will produce not only reports for management of training obtained by each ADH employee, but also transcripts for the employee with cumulative totals of all CEUs earned.

Other benefits to the Health Department range from the obvious increase in skill levels of Agency employees to less easily measured benefits of increased morale, cohesion and motivation of the staff. The Training Committee itself has facilitated increased coordination within the Agency. Some of the seminars for general audiences have been the catalyst for networking among professional staff members, who otherwise would have no occasion to interact with each other.

Future Plans

Long-range training plans include a continuation of both general and specialized seminars presented in-house. The Committee will also develop an orientation package for new managers. Using a work planning group of managers from across the Agency, the Committee will coordinate the development of an in-depth, comprehensive management training course (using ADH managers as trainers) in policies and procedures of the Arkansas Department of Health.

Staff training is no longer looked on as a frill, easily eliminated in hard economic times. Human resource development is critical to survival for companies of the future. For the Arkansas Department of Health, human resource development is a key ingredient in enabling the Agency to perform its mission of protecting and promoting the public health of the citizens of our state.



EDITORIAL

What's Up?

Alfred Kahn, Jr., M.D.

As always, some of the best new research is published in the Journal of Clinical Investigation. Although they are often not of immediate interest to the practitioner, they carry implications of value in diagnosis and therapy.

Written as a Perspective is an article by Fred S. Rosen entitled "The Acquired Immunodeficiency Syndrome (AIDS)", (Journal of Clinical Investigation, Volume 75, Page 1, January 1985). Rosen's article is a good overview on AIDS in which he states that AIDS may be a disorder which varies from a situation in which there are so-called opportunistic infections and unusual malignancies to a relatively mild disorder with swollen lymph glands and elevated temperatures. Many authors, this one included, have discussed the fact that AIDS seems to be a disease limited to special groups—70 percent being in homosexual males. It is said that, percentage-wise, the next biggest group is individuals who abuse drugs intravenously. Also mentioned by Rosen are hemophiliacs who take Factor VIII concentrates, Haitian immigrants and immigrants from Zaire to Belgium and France. Rosen feels that AIDS is due to a virus which is spread by blood or body fluids and falls into the lymphocytotropic retrovirus group. He says that the most prominent feature of AIDS is the presence of immunodeficiency, permitting the appearance of opportunistic infections in the affected individual. Rosen states that there is a lesser version of AIDS called pre-AIDS or AIDS-related syndrome; this lesser version is characterized by swollen nodes, night sweats, fever and weight loss; he states that only ten percent of these patients develop true AIDS. In Rosen's review of the immunologic findings in AIDS, he states that lymphopenia is present and gets increasingly worse—there is one special so-called subset of T-lymphocytes "defined by monoclonal antibodies to T4" — and this greatly-decreased subset of T4 is the outstanding characteristic of AIDS, from an immune point of view. The function of the T-cells in response to antigens is greatly reduced in the area affected by AIDS. The author describes the pathology as showing follicular hyperplasia in the lymph nodes, and he further states that the germinal centers contain many T8 lymphocytes. The author cautions that the difference between T4 and T8 is not a sharp division into helper and suppressor cells. The virus producing AIDS is currently called, in the United States, HTLV III, meaning human T-cell leukemia virus III. The serum is positive to this virus in a high percentage of risk groups. Rosen states that the virus can be grown in certain human tumor cells. There is an interesting section in this article on the relationship to other immunodeficiency diseases in which the author points out that macaque monkeys have a disorder due to a retrovirus in which there is neutropenia, leukopenia and a deficiency of gammaglobulin. A similar retrovirus can cause feline leukemia. Another point of considerable interest is that both measles virus and Epstein-Barr virus can cause immuno-suppression in humans. A final point brought up by Rosen is that antigen overload may play some role in AIDS. This is purely speculative, but there is some evidence for suspecting this.

One might feel that there is little of general interest in an article entitled "Interaction Between Fibrinogen and Cultured Endothelial Cells". This article by Dejana, Languino, Polentarutti, Balconi, Ryckewaert, Larrieu, Donati, Mantovani and Marguerie (Journal of Clinical Investigation, Volume 75, Page 11, January 1985), is of more than passing interest. Vascular disease is an outstanding cause of death among humans. Blood vessels are injured from time to time, and

it raises the question of how they are repaired. Blood vessels accompany tumor tissues, and one wonders why those vessels spread to nourish abnormal cells. If the vessel is injured from the inside, the endothelial cell obviously has to be repaired, and this article by Dejana, et al., is an effort to determine if it could cause a migration of endothelial cells. In order to do this, they used a chamber and studied the ability of fibrinogen to cause endothelial cells to migrate using varying concentrations. They found that there was a time- and concentration-dependent migration of endothelial cells across filters. Fibrinogen is further said to attach itself to the endothelial cells at certain areas. The mechanism by which fibrinogen causes the endothelial cells to migrate is unknown. In any event, the very fact that fibrinogen can cause endothelial cell migration certainly stimulates one to speculate on its ability in both the repair of arterial injuries and in the support of neoplastic cells.

Different aspects of coronary artery disease are being reported in almost every medical journal. One of the treatment areas that has been under a good deal of scrutiny has been the use of thrombolytic agents. In this context, there has been a lively discussion in the literature as to whether the thrombolytic agent should be given directly into the coronary arteries, or if it is just as effective if given intravenously. There has also been some question as to whether or not the use of intravenous agents to dissolve clots might cause widespread clotting problems and produce undesirable bleeding. There is an article entitled "Coronary Thrombolysis and Infarct Size Reduction After Intravenous Infusion of Recombinant Tissue-type Plasminogen Activator in Nonhuman Primates" by Flameng, Van deWerf, Vanhaecke, Verstraete and Collen (Journal of Clinical Investigation, Volume 75, Page 84, January 1985). The authors state that they felt that coronary thrombosis was a final common pathway which brought about acute myocardial infarction, despite the underlying factors. This being the case, they wanted to test the effectiveness of thrombolytic agents in, so-to-speak, dissolving thrombi in coronary arteries. Secondly, they wanted to determine if a lytic agent, given intravenously, would cause systemic damage. They used ten baboons as their subjects. They induced coronary artery thrombi surgically after putting in appropriate instruments to measure blood flow and to obtain samples of blood. The animals were ultimately sacrificed. Their results showed that they were able to induce coronary artery thrombosis in the ten baboons studied. They were further able to show that thrombolysis was obtained using plasminogen activator intravenously. It is of interest that they could prove this in nine out of ten animals by angiographic technique during a 30-minute period of treatment; the remaining animal did have thrombolysis, but it took approximately eight minutes longer to achieve this result. Their study indicates that, in general, the sooner thrombolysis is accomplished, the less damage there is to the myocardium—as they say it "has a profound beneficial effect on infarct size. Indeed, there seems to be a good correlation between time to reperfusion and infarct size". It is said in their article that comparative studies using different animals for revascularization indicates that there are species differences. In the results of early reperfusion, pigs are said to have less collateral blood flow and, for this reason, a period of thrombosis which might induce only a subendothelial infarction in dogs will produce a transmural infarction in pigs. Thus, it is somewhat impractical to try and directly transfer animal experiments to human experience. Baboons are said, however, to have a coronary artery vasculature similar to humans. The authors are emphatic that the longer the occlusion time in baboons, the more likely a transmural infarct is to occur. They also stated that they "found a considerable salvage of myocardium at risk after 38 to 108 minutes of coronary occlusion and subsequent reperfusion with plasminogen activator". Flameng, et al., described the appearance of visible myocardial hemorrhage in the animals that are reperfused and the hemorrhage seems to bear a direct relationship to the time of occlusion. Other authors have reported this and have stated that the hemorrhage only occurs in the necrotic myocardium. The hemorrhage apparently does not have an adverse effect on the formation of collagen tissue in the repair process. The authors' measurements of blood flow in their subjects indicates that it is reduced even following reperfusion for up to six hours. Of particular interest to the practicing physician is the fact that the use of plasminogen activator did not cause widespread, clinically detectable hemorrhage or serious clotting abnormalities from a clinical point of view. All in all, this paper seems to suggest that intravenous throm-

bolysis is a satisfactory method of inducing the disappearance of free coronary artery clots and that this technique is further able to salvage areas of myocardium which might necrose—without causing widespread clotting difficulties.

Articles on Graves' disease are numerous. Many authors have been intensely interested in the immunologic implication of Graves' disease, especially since the original article on LATS (Long-Acting Thyroid Stimulating Substances). One of the newer articles along these lines is entitled "Antineutrophil Autoantibodies in Graves' Disease" by Weitzman, Stossel, Harmon, Daniels, Maloof and Ridgway (Journal of Clinical Investigation, Volume 75, Page 119, January 1985). Many people have been impressed by the fact that Graves' disease is often accompanied by a low white blood cell count—especially neutropenia. Because of this association, Weitzman, et al., decided to make an investigation of the association between neutropenia and Graves' disease from an immunologic point of view. "Using the opsonic method to assay serum against homologous neutrophils, 6 of 11 Graves' patients had antibodies. Using the staphylococcal assay for the same purpose, the sera of 10 of 20 patients were positive." In the course of their studies, they reported three major findings, namely, "(a) patients with Graves' disease frequently have antineutrophil autoantibodies, (b) TSH inhibits the opsonic activity of these antibodies, and (c) TSH binds to neutrophils rapidly and reversibly." The authors were somewhat puzzled by the fact that, although 50 percent of the patients had antineutrophil antibodies, many of these individuals did not have neutropenia; they concluded that the antibodies might not kill the white cells or, if the white cells were destroyed, they were rapidly replaced by bone marrow. The authors were also curious as to whether or not the antineutrophil antibodies were, in some manner, related to the antibodies which produce Graves' disease—and they were further puzzled that they were not found in a higher fraction of patients. The authors concluded that this second situation was the result of several factors interacting and could not be directly explained.

Richard A. Cohen has presented a thought-provoking article entitled "Platelet-induced Neurogenic Coronary Contractions Due to Accumulation of the False Neurotransmitter, 5-Hydroxytryptamine" (Journal of Clinical Investigation, Volume 75, Page 286, January 1985). The article has to do with platelets and coronary artery contractions. It is becoming more and more apparent that aggregation of platelets, for varying reasons, plays a major role in coronary disease—and much is being written about this; it is not a new idea. There is a good deal of research currently going on to determine the effect of coronary spasm in the production of myocardial infarction, as well as angina pectoris. Cohen's article tends to tie these two factors together. He relates that aggregations of platelets can cause narrowing of dog preparation coronary arteries. The intermediary in this is said to be 5-hydroxytryptamine (5HT). Cohen endeavored to find out if 5-hydroxytryptamine could be, so-to-speak, accumulated by the adrenergic nerves which attach to coronary arteries—and he further set up an experiment to determine if the 5-hydroxytryptamine could be released by the nerves; if this were the case, the adrenergic nerve function might be modified or changed. Cohen concluded that 5-hydroxytryptamine could be taken up by coronary adrenergic nerve endings. His studies further indicated that 5-hydroxytryptamine could be released by the adrenergic nerves and that the 5-hydroxytryptamine could act as a false transmitter, causing the coronary arteries to go into spasm instead of dilating. This is a very provocative article in the context of coronary disease.

These articles represent some of the extremely interesting new medical research.



"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Journal of the Arkansas Medical Society
Vol. 4 No. 5 Nov. 15, 1893 p. 262
County Societies.

Sebastian County Society.

The regular meeting of the Sebastian County Medical Society was held in Dr. Eberle's office, Dec. 13, 1893. Those present were Dr. J. G. Eberle, President, and Drs. Gardner, Saunders, Hatchett, Blakemore, Wright, Moulton, Amis, Hynes, Epler and Southard.

After some routine business the following officers were elected for 1894, viz.: Dr. Geo. F. Hynes, President; T. J. Wright, First Vice-President; W. F. Blakemore, Second Vice-President; J. D. Southard, Secretary; J. W. Breedlove, Treasurer.

Dr. Southard, the essayist for the evening, then read a paper entitled, *"The Identity of Diptheria and so-called Membranous Croup"*.

ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG shaws the patient ta be in sinus rhythm. The P waves are praminent and peaked in the inferiar leads as well as in the right precordial leads. There is a diphasic P wave in V_1 with the initial campanent daminating. These P waves are campatible with right atrial hypertraphy. Alsa, the QRS axis is ta the right, an initial Q wave exists in V_1, and the R wave daminates the QRS camplex in V_1. Additianally, ST depressian exists in the inferiar leads and in V_2-V_6. These findings are consistent with right ventricular hypertraphy. The patient's physical examinatian hints at RVH alang with an ASD, passibly with Eisenmenger's syndrame. Hawever, many readers wauld alsa include such entities as rheumatic heart disease and pulmanary embali in their differentials. There is insufficient infarmation given ta cement a diagnasis but there is evidence af right sided averlaad in the histary and physical and the ECG gives suppart ta that impressian.

MEDICINE IN THE NEWS

THE MONTH IN WASHINGTON

Congress Puts GME Bills On Fast Track

As potential savings items in the federal budget, proposals to drastically alter the way Medicare pays for graduate medical education are on the Congressional fast track and the field of candidates is growing.

Four legislative alternatives to the President's proposals have been introduced for consideration in the Congressional budget process which is now seriously bogged down in House/Senate conference.

Three of the contenders would limit residencies for foreign medical graduates and modify Medicare contributions to direct training costs, promoting primary care over specialty care training. The other would establish hospital grants that would be updated for inflation and adjusted up

to a point for changes in the size of an institution's residency program.

In introducing the latter proposal, Ohio Republican Ralph Regula claimed the measure had "universal" support within the medical education community and privately some medical groups admit a preference for the Regula approach. They see it as less restrictive than the other legislative approaches and believe its adjustments for size make it preferable to the Administration's proposed freeze.

Among the other legislative approaches, witnesses at a recent Senate Finance Committee hearing appeared to favor a plan that has just been introduced by three Senate Finance Committee members—Sens. Robert Dole (R-KS), David Durenberger (R-MN) and Lloyd Bentsen (D-TX).

The plan (S. 1158) would freeze Medicare payments for health professions training costs in 1986 and in future years would limit the number of years of medical training Medicare would contribute to. It is in competition with a proposal by Sen. Dan Quayle (R-IN) that would condition Medicare payment on a fixed proportion of primary care residents and with one by Rep. Henry Waxman (D-CA) that would fund primary care residents at a higher level than other specialties. Quayle's bill has been approved by a subcommittee of the Labor and Human Resources Committee.

While the medical education establishment generally accepts the premise that primary care residencies should be encouraged, witnesses from 12 hospital, medical and academic organizations told Durenberger they are skeptical about plans that would base payment on a government's definition of primary care or of the appropriate distribution of residencies between specialties.

"A quota or fixed ratio (of physicians) is very difficult in a system in great flux," warned Louis J. Kettel, M.D., who is vice chairman of the American Medical Association's medical school section. "Flexibility is important as the market adjusts to diagnosis related groups" and as changes occur in the "boundaries of who is doing primary care," the University of Arizona Medical College dean added.

None of the witnesses, on the other hand, expressed outright opposition to the Senate Finance members plan, though most of the medical and academic groups agreed with Dr. Kettel's assertion that limits on the number of years of training Medicare will support should "not be adopted without assurances that adequate funding will remain available for residencies with long-term training programs."

Virtually every group favored S. 1158's elimination of Medicare funding for residencies filled by foreign medical graduates who are not U. S. citizens, although all urged that the provision be phased in to protect those institutions that are presently very dependent on FMGs. A majority of the groups, suggested that funding should be denied to American citizen FMGs as well and Congressional staffers say there is a good possibility that the bill will be altered to include both these recommendations.

* * * *

The Blues Release Transplant Criteria

The Blue Cross and Blue Shield Association has released a list of criteria that can be used to help plans select medical centers for heart or liver transplantations.

By limiting coverage to transplant centers with good track records, Blue Cross-Blue Shield plans can be assured the highest quality of care, the national association believes. "Providers with more experience . . . tend to be more effective than providers with less experience", according to the report, entitled "Criteria for Evaluating Institutions for Liver and Heart Transplants".

California Blue Shield is the first plan to apply selection criteria to transplant centers. It has been so successful that it has decided to apply similar selection criteria to percutaneous transluminal coronary angioplasty, obstructive sleep apnea treatments, lithotripsy, and other procedures.

Because other plans risk reprisal under antitrust laws, the national association has been hesitant to urge nationwide adoption of transplant selection criteria. The report advises each plan to examine its state statutes to see whether the use of selection criteria would violate restraint-of-trade provisions.

The sudden interest in evaluating the competence of transplant centers is prompted, in part, by the exponential growth in the number of transplant institutions. Nationwide, the number of heart transplants jumped from 180 to 320 and the number of liver transplants increased from 160 to 240 between 1983 and 1984. A recent report by the Battelle Institute found that 197 centers are ready to jump into the heart transplant business if federal coverage is provided.

The criteria face stiff resistance from the medical community which fears restrictions on where, when and how it provides care. A limit on the number of transplant centers stifles innovation by newer and less established centers, says the American Hospital Association. In addition, it creates a "Catch-22" situation where a center needs experience to qualify but must qualify to gain experience.

Similar limitations on coverage—attempted but defeated by Congress last year—would have given the Department of Health and Human Services (HHS) the authority to restrict coverage for transplants and other procedures to designated medical centers.

There are signs that the Reagan Administration is now considering a similar approach. At a May press conference, HHS Secretary Margaret Heckler said that heart transplantations may achieve a "medically acceptable" survival rate "only in medical centers where a critical mass of clinical expertise and experience has been gathered".

The guidelines place transplant centers into four different categories:

★ "established" centers, performing at least 24 transplants in the past 2 years with survival rates between 70% and 85%.

★ "emerging" centers, performing between 12 and 23 transplants in 2 years and having survival rates between 60% and 80%.

★ "intermediate" centers, performing between 6 and 11 transplants. Because their survival rates are based on so few transplants, it is difficult to assess the quality of these centers, the report says. Blue Cross-Blue Shield plans should assess each center on a case-by-case basis.

★ "early" centers, performing fewer than 6 transplants in 2 years. These centers must "prove themselves".

The guidelines also suggest criteria for evaluating the internal structure of a transplant center. Institutions should have a transplant surgeon who has received clinical training from another transplant center, they state. Additionally, an institution should be able to provide care before the transplant, after the transplant, and after discharge. It also should be able to provide safe and effective immunosuppressive therapy, with a staff well-trained in handling the special problems of these patients.

Experience is important, the report shows. Potential heart transplant centers should perform at least 500 cardiac catheterizations a year, 250 open heart surgical procedures a year, and percutaneous transvenous endomyocardial biopsies. Liver transplant centers should have a staff that is experienced in the treatment of hepatic disease.

Patient selection should be standardized, as well. Heart transplant centers should select patients based on National Heart, Lung, and Blood Institute (NHLRBI) criteria; liver transplant centers should select patients based on criteria set by the 1983 National Institutes of Health consensus conference.

* * * *

New Medicare Regs Freeze Fees, Shift Prices

In addition to freezing Medicare's base payment rates for 1986, new regulations proposed by the Reagan administration would also lead to significant shifts in the prices Medicare pays hospitals.

Thus far, the regulations have drawn attention mainly for the proposed rate freeze. Health Care Financing Administration officials have included an elaborate set of calculations that concludes rates were too high in 1985 and could be reduced by at least 2.85%. A rate reduction was rejected as "punitive".

In addition to the base payment rate, however, Medicare payments are based on the relative weight of the diagnosis related groups the patient is assigned to. The new regulations propose to rerank or recalibrate the weights of the system's 470 DRGs. This will significantly increase the price paid for some conditions such as cataract surgery and lens implants while decreasing payments for other conditions such as cardiac arrhythmia.

Published in the Federal Register on June 10, the regulations also would affect the price of some individual medical procedures by assigning them to a different DRG. They would bring alcohol and drug treatment centers into the prospective pricing system; create a new DRG for some bilateral joint procedures; and establish a process for making mid-year changes in the DRGs. Public comment would follow at the end of the year.

The new rules leave open the politically sticky issue of revising a wage index used to adjust DRG rates for local labor costs. A revised index proposed in the rules would lead to major payment increases for some hospitals while decreasing payments to others and it is slightly more beneficial to rural hospitals than urban hospitals.

Congress has directed that the new index be applied retroactively, however, and some hospitals would have to pay back enormous sums if this provision were applied. HCFA officials are asking Congress for advice on this issue and they hope Congress will eliminate the retroactivity clause.

Open for public comment only until July 10, the new rules would also freeze rates for hospitals that are exempt from the prospective payment system and from state rate controls. They would continue the transition from rates that are partially based on hospital specific and regional costs to one that is based entirely on uniform national rates. They do not include an adjustment for hospitals that treat a "disproportionate" share of elderly and indigent patients. They propose a new method of counting hospital beds and residents for adjusting payments to teaching hospitals.

The decision to impose the freeze through regulations has angered many Congressmen. Hospitals hope to play on this to win some adjustments. The for-profit Federation of American Hospitals has threatened to sue the federal government if the freeze is accomplished by regulation rather than legislation and the American Hospital Association has issued an alert asking all its members to protest the Administration's action. The AMA also has opposed the freeze on hospital rates.

* * * *

Super-PRO Awarded

A hotly-contested contract to monitor the work of the nation's 54 Peer Review Organizations has gone to SysteMetrics, a Santa Barbara subsidiary of the McGraw-Hill publishing firm.

The so-called Super-PRO contract had been sought by 15 bidders, including the Iowa and Kansas PROs, several PRO subcontractors and old PSROs, and the American Medical Association. An earlier bid request had been withdrawn and scaled down after bids from the AMA and three other organizations all exceeded the funding that Health Care Financing Administration officials had available for the contract.

Effective June 17, the $2 million SysteMetrics contract will run for 14 months, with a $1.3 million, 10-month renewal contingent on Congressional funding in fiscal 1987.

SysteMetrics expects to review 83,000 medical records as part of its contract to assess the validity of the PRO objectives and criteria and the ability of the PRO to make medical decisions that conform to those objectives and criteria.

A first level of review will be conducted by 20 employees of SysteMetrics. Cases questioned by the reviewers will be referred for physician review. The bulk of the physician review will be performed by National Medical Audit, a physician-owned review firm in San Francisco. Headed by psychiatrist Arnold Milstein, M.D., NMA has 30 physician members, all of whom are board-certified and hold positions in major teaching hospitals. In addition, four regional physician panels of three members each will be established to review claims where regional issues arise.

Bills To Provide Medicare-Medicaid Coverage For Respiratory Care

Claiming that current rules "violate common sense," Rep. Ron Wyden, (D-OR) and Sen. John Heinz (R-PA) have introduced bills to provide Medicare and Medicaid coverage for respiratory care outside a hospital setting.

The legislation, the Home Respiratory Care Act of 1985, would provide coverage to respirator-dependent patients who had already been hospitalized for 30 days and who preferred to be treated at home or in a nursing home. It results from the disbanding of a federal board that had approved waivers that permitted Medicaid to pay for about 200 seriously disabled children and adults who had remained hospitalized because Medicare or Medicaid would pay for care inside the hospital but not at home.

The Reagan Administration says the board is no longer needed since states can obtain Medicaid waivers, but critics say that the waiver procedure is difficult and coverage for respirators and other services will remain unavailable in many states.

The issue also has led to hearings on pediatric home health care in the Senate Labor and Human Resources Committee and hearings are expected in the House Commerce health subcommittee.

The review board was formed after President Reagan called the nation's attention to the case of Katie Beckett, an Iowa child who remained hospitalized because Medicaid would not pay for a respirator in her home. HHS officials estimate that Medicaid would save about $50 million a year under the process.

Heinz and Wyden say their bill would enable about 2,200 hospitalized, respirator-dependent patients to go home and that it could save

Medicaid $20 million a year. The measure would be at least cost-neutral to Medicare, according to the sponsors.

* * * *

PaPRO In Limbo

Federal officials' plans to sign a new Peer Review Organization (PRO) contract with the Pennsylvania Medical Society (PMS) have been thrown into limbo by an unexpected proceeding in a U. S. bankruptcy court in Harrisburg.

The court action provides at least a temporary reprieve for the Pennsylvania Peer Review Organization (PaPRO) which Medicare officials had sentenced to die on June 19. It came just one day before medical society officials were to meet with the Health Care Financing Administration on a final contract agreement under which PMS would assume the PRO responsibility for reviewing the care of hospitalized Medicare patients in the state.

PaPRO had signed the $18.3 million PRO contract in mid-October but then ran into start-up problems and claims processing delays which led HCFA to freeze some $1.9 million of PaPRO's funds. A federal district court, on grounds it had no jurisdiction, dismissed a PaPRO request that would have held up the termination and released the funds. An emergency hearing before an appeals court was also denied.

HCFA then set an official termination date of June 19 for PaPRO and initiated "sole source" discussions with the medical society. A "final" agreement was expected at meetings scheduled in Washington on June 21.

The plan went awry when PaPRO, on what was to have been its final day, went to the bankruptcy court to seek to have the termination of the contract stayed and the funds released in order to pay off its creditors, reorganize and stay in business. In making its case, PaPRO complained that HCFA has not properly followed a lengthy termination process spelled out in the PRO law and regulations.

* * * *

Cigarette Tax Poll: Keep The Tax High

A new Gallup poll has found that 75% of the American public believes the federal tax on cigarettes should be kept at 16 cents rather than cut back to eight cents.

The poll, which was conducted for the National Heart Savers Association, found that only 18% of Americans believed that the tax should revert to eight cents as scheduled for October 1. Seven percent of the more than 1,000 people interviewed were undecided.

The poll comes at a time when Congress is considering at least 12 different cigarette tax measures. Five of the bills would increase taxes to 32 cents; five would hold the tax at 16 cents and, in some cases, then raise it annually by a percentage equal to the increase in the consumer price index. The stiffest proposal, by Rep. Anthony Beilenson (D-CA), would raise the rate to 40 cents per pack.

The bulk of the proposals (9) would earmark at least a portion of the increased federal revenues to the Medicare hospital trust fund.

Debate could come as part of the federal budget action if Congress is able to agree on a budget resolution. The Reagan Administration is opposed to that approach, however, and has said that the current 16 cents tax should be allowed to revert to 8 cents on October 1.

* * * *

Health Care Clearinghouse Bills Introduced

Legislation has been introduced in both the House and Senate that would establish a clearinghouse for data on services, systems, prices, and quality of health care.

The clearinghouse would be designed to help consumers and employers find and interpret information about health care. It would not collect or distribute actual data, but would tell consumers where they could find it.

"We need a health care system that's a free market for consumers, not a free ride for producers", said co-sponsor Sen. Albert Gore Jr. (D-TN). "A health care data clearinghouse will help to make health care more equitable, more accountable and, above all, more affordable." It would be utilized by consumers and small businesses that now lack the information needed to make prudent cost-containment decisions, Sen. Gore said.

The legislation—S. 1367 in the Senate and H.R. 2882 by Rep. Ron Wyden (D-OR) in the House—instructs the Secretary of the Department of Health and Human Services (HHS) to make grants for the establishment and operation of a clearinghouse. Each clearinghouse must establish an advisory panel with representatives of physicians, hospitals, insurers and other representatives of the health care community. In addition, a report on clearinghouse activities must be submitted to HHS once a year.

The clearinghouse would identify public and private organizations that have experience with the collection of aggregate health care data, collect information on their use of methods of analysis, and provide technical assistance in the use of these methods to the interested public.

* * * *

Commission On Bioethics Bill

A successor to the now-defunct President's Commission for the Study of Ethical Problems in Medicine has been introduced by Tennessee Senator Albert Gore Jr.

The proposed National Commission on Bioethics would examine issues presented by the application of new technologies to humans. For instance, its first task would be to report to Congress on the implications of human applications of genetic engineering.

A similar commission was proposed last year as part of the National Institutes of Health reauthorization bill, but died when President Reagan vetoed the legislation. The earlier Commission expired in 1982.

The Commission would be composed of 15 members, four with biomedical backgrounds and three in health care. The remaining members would be members of the public or representatives of law, ethics, and theology. These members would be appointed by a special 12-member Congressional Board on Bioethics, also established by the bill.

It would serve only as an advisory body; the commission would have no regulatory enforcement power. However, it would report to the Congress.

"The Commission will provide Congress with much-needed analysis of the many difficult bioethical issues that confront our society", said Sen. Gore.

* * * *

Supreme Court To Hear "Baby Doe"

Tackling one of the major medical issues in recent history, the Supreme Court has agreed to hear arguments next term on *AMA et al., vs. Margaret M. Heckler;* the so-called "Baby Doe" case.

The Court must decide whether the nation's civil rights statutes apply to the treatment of handicapped newborns—in other words, whether the anti-discrimination law covers medical decisions in the same way it covers transportation, housing, and employment decisions.

Lower courts have already ruled that it does not. Regulations that would have sent investigative squads into hospital nurseries to find violations of Section 504 of the Rehabilitation Act have been proposed twice—and rejected twice.

Since then, Congress has passed legislation saying that intervention is sometimes inappropriate: when death is imminent, when treatment is futile and inhumane, when treatment would not correct all of the infant's life-threatening conditions, and when the infant is chronically and irreversibly comatose.

If the Supreme Court justices decide that the anti-discrimination law does apply, hospitals risk losing all federal funding if found guilty of withholding care.

Administration of the current "Baby Doe" law—which is based on anti-child abuse legislation, not anti-discrimination laws—would not be changed in any substantial way, according to Justice Department officials. Whereas the child abuse legislation focuses specifically on state and local child abuse authorities, the anti-discrimination regulations targeted hospital administrators.

* * * *

Ban On 'Ecstacy'

A hallucinogenic drug called "Ecstacy" used by some psychotherapists was outlawed beginning July 1, the Drug Enforcement Administration (DEA) announced in June.

The drug, MDMA or "Ecstasy", has no accepted medical usage and high abuse potential, the DEA says. A ban was necessary to avoid "imminent hazard to public safety", according to DEA Administrator John C. Lawn.

The drug, whose scientific name is 3,4-methylenedioxymethamphetamine, joins the ranks of heroin, cocaine and LSD as a highly restricted "Schedule I" drug. Possession of a "trace" of MDMA will be punishable by up to 15 years in prison and a $125,000 fine.

The ban has rekindled the debate over the use of psychoactive drugs in therapy, silent since Congress passed the 1966 Drug Abuse Control Amendments. Physicians have a right to research the therapeutic potential of mind-altering drugs, MDMA supporters say.

Although it is difficult to determine the exact extent of medical usage, therapists and analysts estimate that between 35 and 200 physicians are currently using the drug on some patients.

A survey of 300 hospitals across the country found there have been eight emergency room visits and two deaths from MDMA since 1979. One death—a California psychoanalyst with a heart condition—occurred with a 200 milligram dose, well above the typical 50 to 110 milligram dose.

Although the drug has been patented since 1914 and was tested by the U. S. Army in the early 1950s, it has only recently gained notoriety. It is estimated that nonmedical use of MDMA has climbed from 10,000 doses in 1976 to 30,000 per month in 1985.

* * * *

Cyclamate Clears Another Hurdle

In the latest chapter of its regulatory story, cyclamate has been cleared of any direct link to cancer. But it may cause tumors in the presence of other carcinogens, according to a new study by the National Academy of Sciences (NAS) released in June.

The NAS panel found that "the weight of experimental and epidemiological evidence does not indicate that the artificial sweetener, by itself, is carcinogenic but it may be a promoter or cocarcinogen in the presence of other substances".

These mixed findings could delay approval of the product, banned since 1969. Its complex interaction with other substances needs further study, the NAS panel urged.

The report does not compare the banned sweetener with those of the other two artificial sweeteners now approved by the Food and Drug Administration (FDA). But a 1982 NAS review found that aspartame was non-carcinogenic and a 1978 review found that saccharin is a weak carcinogen and promoter in animals.

The new NAS report, requested by the FDA, says that the findings of two 1969 rat studies—which found an association between cyclamate and cancer—have not been repeated. Moreover, newer and better studies show no such link, it says. The panel recommended, however, repetition of some animal studies showing a promotional or cocarcinogenic effect of cyclamate. The findings of human studies were less clear, and more troubling. Two groups appeared to be at increased risk; women non-smokers and women who used large amounts.

Several other countries — including Canada, France, Germany and England—still use the artificial sweetener.

* * * *

FDA Quack Squads Crack Down

The salesmen for "Bio-Line Catalyst Water" thought they had snagged new business; at their booth at a Pittsburg health expo last November, an interested customer read promotional literature and listened to a sales pitch which promised treatment of heart disease, arthritis and urinary tract disorders.

Instead, they got a tersely worded letter from the Food and Drug Administration (FDA), warning them against selling an unapproved new "drug", making misleading claims and giving inadequate instructions for use. Continued sales could result in seizure of the product, they were told.

The "customers"—actually, undercover officers of the FDA's new Fraud Branch—have exposed 12 other profiteers of unproven remedies. The FDA fraud squad plans to visit other health expos this year to gather information and seek evidence of inter-state sales of fradulent products.

Until last fall, the FDA had no formal program to combat health fraud. Quackery was growing increasing sophisticated and the agency was "overmatched . . . by too many quacks, too skillful at the quick change of address and product name, for the cumbersome procedures of FDA regulation", former FDA Commissioner Arthur Hull Hayes, M.D., said last year.

Now, six FDA employees are cracking down on worthless or dangerous products working through FDA's 150 branches around the country. In addition to their undercover trips to health expos, they are investigating steroids, "look-alike" drugs, Herbalife supplements, mail-order weight loss products, General Nutrition products, chelation therapy, health claims on Kellogg's bran cererals, and bulk ships of DMSO.

In addition, the agency has stepped up public education efforts to help consumer recognize products that are mislabeled, misrepresented, or potentially harmful.

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CBO Report Says Many Veterans Will Lose Benefits

The Reagan Administration's plans to change VA eligibility standards would deny hospital and outpatient care to an estimated 655,000 veterans, according to new Congressional Budget Office (CBO) data.

If the proposal is passed by Congress, no longer

would the VA continue its 15-year policy of offering unlimited free care for all veterans. Instead, it would use a "means test" to restrict care to non-service-connected veterans.

Enactment of the means test would shift over to Medicare an estimated 30,000 patients needing hospitalization and 125,000 patients seeking outpatient care, CBO said. The remaining 500,000 patients who earn more than the means test cutoff but say they cannot afford medical care in non-VA facilities would be forced to go elsewhere.

The stricter eligibility standards would affect roughly 158,000 hospital discharges a year, Nancy M. Gordon of CBO recently told the Senate Committee on Veterans' Affairs. The plan would save the federal government $390 million a year, based on the projected costs of VA medical care under current practice. The net savings would rise to more than $1.4 billion by 1990.

A second proposal—which would require private health insurance plans to reimburse the VA for medical expenses incurred by their clients—would save an estimated $50 million in 1986, creating net savings of about $200 million by 1990. Only about 10% of non-service-related veterans still served by the VA would be affected if the means test were enacted.

The plan has met intense opposition by veterans groups and the insurance industry. Former VA chief medical director Donald L. Custis, M.D., predicts that patient cutbacks would close dozens of VA hospitals, reduce staff and compromise the quality of care.

* * * *

Cancer And The Atomic Vet

Veterans of the 1957 Nevada nuclear test blast called "Smoky" are dying from excessive rates of leukemia, but participants in five other nuclear test series show no increased mortality from cancer or other diseases, according to a National Academy of Sciences (NAS) report released in June.

In fact, mortality rates in men who took part in these series—code-named "Greenhouse", "Upshot-Knothold", "Castle", "Redwing", and "Plumbbob"—are less than those of the average population, the NAS researchers found.

Researchers found 10 cases of death from leukemia in the 3,554 "Smoky" participants, instead of the 3.9 cases they expected based on deaths in the general U. S. population—2.5 times the expected number of deaths. Of these 10 cases, there were 5 cases of acute myeloid leukemia, 2 cases of chronic myeloid leukemia, 2 cases of chronic lymphatic leukemia, and 1 case of acute lymphatic leukemia.

The findings confirm the results of a 1979 study by the Centers for Disease Control (CDC) on "Smoky" participants. But the surprise was that they are the only group of veterans who showed excessive mortality from a form of cancer known to be induced by ionizing radiation. Because of the low cancer incidence among other test participants, NAS researchers believe that the appearance of leukemia among "Smoky" participants could be a "chance aberration".

* * * *

HHS TV Spot To Educate Elderly On Drugs

"Use medications safely for a better life" is the tag line in a new public service announcement produced for the American Association of Retired Persons as part of a "Healthy Older People" program directed by the Department of Health and Human Service and involving a variety of state and local governments, voluntary groups and businesses.

Intended to help prevent drug side effects and interactions among the elderly, who use 25% of prescribed medications, the ad urges older people to make their physicians aware of medicines they are taking. The ads, which also include spots on exercise and nutrition, are to be distributed through contacts designated by the governor in each state and will include a local tag line identifying organizations where the elderly can obtain further information.

A toll-free hotline to provide information and program assistance to the aged and to health professionals has been established in the HHS Office of Disease Prevention and Health Promotion (1-800-626-5433).

* * * *

MEDICINE AND RELIGION SYMPOSIUM

September 28, 9:00 a.m.-3:00 p.m. Baptist Medical Center, Little Rock. Sponsored by the Medicine and Religion Committee, Arkansas Medical Society, Dr. Walter O'Neal Chairman. Registration $5 (includes lunch). Mail to: Office of Education, Baptist Medical Center, 9602 I-630 Exit 7, Little Rock, Arkansas 72205. Program will be:

Stewardship and Health

"Stewardship of Medical Resources"

Chris Hackler, Ph.D., Head of the Division of

Medical Humanities, University of Arkansas College of Medicine, Little Rock

"Stewardship of Pastoral Resources"
William D. Carr, Chaplain, University of Arkansas College of Medicine, Little Rock

"The Beginning and End of Life"
Donald B. Doty, M.D., Cardiovascular Surgeon, Salt Lake City

"Stewardship Defined"
Robert E. L. Bearden, D.D., Little Rock

Group Discussion

"Regarding Euthanasia and Active Omission of Life Support"
Fred O. Henker, M.D., Professor, Psychiatry and Behavioral Sciences, University of Arkansas College of Medicine, Little Rock

"Suicide"
W. Payton Kolb, M.D., Psychiatrist, Little Rock

"Look at Sex Mores"
John Schultz, M.D., Internist, Little Rock

"Adolescent Problems"
Irving Ringdahl, M.D., Associate Professor, Child Psychiatry, University of Arkansas College of Medicine and Arkansas Children's Hospital, Little Rock

For further information, contact Dr. Walter O'Neal at Baptist Medical Center; telephone 227-2672.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

FELLOWSHIP TRAINING IN PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY

Presented by Bimlendra Sharma, *(ongoing program), UAMS Cardiac Catheterization Laboratory,* Little Rock. Hour for hour basis Category I credit. $100 fee. Sponsored by UAMS.

UPDATE FOR THE PRACTITIONER ON DIAGNOSIS AND MANAGEMENT OF BRAIN TUMORS IN CHILDHOOD

Presented by Morris Kletzel, M.D., and D. H. Berry, M.D., *October 26, 8:00 a.m. to 12:30 p.m.,* Education II Building, UAMS, Little Rock. Four hours Category I credit. Fee: $50. Sponsored by UAMS.

PSYCHIATRY UPDATE 1985

Presented by G. Richard Smith, M.D., and Philip Mizell, M.D., *November 2-3, 8:30 a.m.-12:00 noon,* Ramada Inn, Eureka Springs. Credit hours and fee to be announced. Sponsored by UAMS.

SECOND ANNUAL PERINATAL CONFERENCE ON HEALTH CARE

Presented by Frank Miller, M.D., and Becky Butler, L.C.S.W., *November 8-9, (November 8: 8:00 a.m.-3:00 p.m.; November 9: 8:00 a.m.-12:00 noon,* Camelot Hotel, Little Rock. Eight and one-half hours Category I credit. Fee: $60 for physicians, $30 for other health professionals. Sponsored by UAMS.

RADIOLOGY CONFERENCE

Presented by Howard Barnhard, M.D., *November 8-9,* Hilton Inn, Little Rock. Time, credit hours, fee to be announced. Sponsored by UAMS.

HYPERTENSION IN THE EIGHTIES, FOCUS ON NEW COMPOUNDS

Presented by A. J. Thompson, M.D., *November 21, 7:30 p.m. to 9:30 p.m.,* Gaston's Resort or Baxter County Regional Hospital, Mountain Home. Two hours Category I credit. Sponsored by Baxter County Regional Hospital.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC-South Arkansas.
Colposcopy-Pap Smear Clinic, fourth Tuesday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, second and fourth Thursday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pediatric Conference, second and third Friday, 12:30 p.m. to 1:30 p.m., (second Friday, Warner Brown Hospital, third Friday, Union Medical Center).

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology-Mortality Conference, second Thursday, 3:00 p.m., Conference Room, Building 1.
Radiology Conference, third Thursday, 1:00 p.m., Conference Room, Building 1.
ICU Lecture Series, second Friday, 1:30 p.m., Conference Room, Building 1.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Respiratory Care Case Conference, each Wednesday, 1:00 p.m., Second Floor Classroom.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neurology Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
General Pediatric Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Surgery Conference, each Monday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pathology Conference, first, second, fourth and fifth Thursday, 12:00 noon to 1:00 p.m., Pathology Library.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #2.

LITTLE ROCK — ST. VINCENT INFIRMARY

Interhospital GI Problems Conference, first Monday, 6:00 p.m. to 7:30 p.m., Classroom 3, Education Wing.
Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.

Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interhospital GI Problems Conference, first Monday, 6:00 p.m., St. Vincent Infirmary, Classroom 3, Education Wing.
OB/Gyn Grand Rounds, each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/135.
Mental Health Services Grand Rounds, dates TBA. 10:00 a.m., Arkansas Mental Health Services Administration Building, third floor conference room.
Psychiatry Grand Rounds, each Thursday, 12:00 noon, UAMS Child Study Center Auditorium.
Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Ed II Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS Ambulatory Care Center Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Ed II Building, Room G/135.
Arkansas Academy of Pathology, first Wednesday, 5:30 p.m., Coy's Restaurant.
Surgical Science Conference, each Saturday, 8:00 a.m., Ed II Building, Room G/131.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Psychiatry Service Lecture Series, each Wednesday, 1:00 p.m., NLRVA, Building 170.
VA Medicine Service Teaching Conference, each Monday, 3:30 p.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC SOUTHWEST

Tumor Conference, October 2, "Mammography"; November 6, "Pancost Tumors", 7:00 a.m., St. Michael Hospital.
Chest Conference, November 20, "Connective Tissue Diseases and the Lung", 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

THINGS TO COME

October 24-25

Fall Meeting, Arkansas Orthopaedic Society. Capital Hotel, Little Rock. Meeting will be dedicated to the history of Orthopaedics in Arkansas. For further information, contact Mr. Mike Stephenson, 305 Skyline Drive, Russellville, Arkansas 72801; telephone 968-2124.

October 25-27

Diagnostic Radiology Update. University of Texas Health Science Center at Dallas. Mandalay Four Seasons Hotel, Dallas. Registration fees: $300; $175 for residents and fellows. 18 hours Category I AMA. For further information, Dolly Christensen, Director of Radiology Postgraduate Education, University of Texas Health Science Center, 5323 Harry Hines Boulevard, Dallas, Texas 75235; telephone 688-2502 or 688-2166.

November 7-9

Arkansas Society of Internal Medicine and American College of Physicians. Arkansas Scientific Meeting. Red Apple Inn, Heber Springs. Registration: $70 for ACP masters, fellows, members/ASIM members; exempt for ACP Associates; $100 nonmembers. Keynote speakers will be Dr. Joseph F. Boyle from Los Angeles who is executive vice president of the American Society Internal Medicine and immediate past president of AMA; Eugene A. Hildreth, FACP, Regent, American College of Physicians, Philadelphia; Roger C. Bone, FACP, Professor and Chairman, Department of Medicine, Rush-Presbyterian-St. Luke's Medical Center in Chicago; and Peter F. Kohler, FACP, Professor of Medicine, Tulane University School of Medicine, New Orleans.

Topics will include Rheumatology Update, Testing and Treatment in Critical Care Medicine, Update in General Internal Medicine Based on Case Study, and Impact of Current and Pending Legislation on Medical Practice. For further information, contact Dr. Joe B. Hall, 675 Lollar Lane, Fayetteville, Arkansas 72701.

November 17-20

79th Annual Scientific Assembly, Southern Medical Association. Orlando, Florida. Hour-for-Hour Category 1, AMA/PRA. No registration fee for SMA members; $125 for nonmembers. For further information, contact Jeannette Stone, Southern Medical Association, Post Office Box 190088, Birmingham, Alabama 35219-0088; telephone 1-800-423-4992.

1986

January 13-17

Interventional, MRI and Neuroradiology. Fairmont Hotel, San Francisco, California. Sponsored by the University of California School of Medicine in San Francisco. For further information, contact the Department of Radiology, University of California School of Medicine, San Francisco 94143.

January 20-24

9th Annual San Diego Postgraduate Assembly in Surgery. Hotel Intercontinental, San Diego, California. Approximately 32 hours AMA/CMA credit. For further information, contact Janice A. Parr, Office of Continuing Medical Education, M-017, University of California San Diego School of Medicine, La Jolla, California 92093; telephone 619-452-3940.

February 7-9

The Advanced Hair Replacement Surgery Symposium. Sponsored by the American Academy of Facial Plastic and Reconstructive Surgery. Stough Dermatology and Cutaneous Surgery Clinic and the Majestic Hotel, Hot Springs. The program is accredited for 16 hours in Category I. Registration fee is $525 for AAFPRS members if received before December 31; $575 after December 31. Non-member registration fee is $600 if received before December 31; $650 after December 31. Residents may register for $225. Fees include meals and social functions.

For further information, contact Kathleen Masterson, Congress Coordinator, The Stough Dermatology and Cutaneous Surgery Clinic, P.A., Doctors Park Building, Hot Springs 71901; telephone 624-0673.

February-May 9

Twenty-Seventh Postgraduate Institute for Pathologists in Clinical Cytopathology. Johns Hopkins University School of Medicine. February-April, Home Study Course A, personal reading and microscopic study in personal laboratory.

April 28-May 9, In-Residence Course B. Concentrated lecture series, intensive laboratory, and vital clinical experience at the Johns Hopkins Medical Institutions, Baltimore, Maryland.

Courses designed solely for pathologists who are certified (or qualified for certification) by the American Board of Pathology or its international equivalent. 152 AMA Category I credit hours in both courses.

For further information, contact John K. Frost, M.D., 604 Pathology Building, The Johns Hopkins Hospital, Baltimore, Maryland 21205.

April 9-12

Ambulatory Surgery in 1986: What's Happening Now". Sponsored by Freestanding Ambulatory Surgery Association. Boston Marriott Copley Place. For more information, contact Gail D. Durant, Executive Director, Freestanding Ambulatory Association, 700 North Fairfax Street, Suite 520, Alexandria, Virginia 22314, or call 703-836-8808.



PERSONAL AND NEWS ITEMS

DR. RAGSDILL SPEAKS

Dr. Mary L. Ragsdill of North Little Rock spoke at a recent meeting of the Arkansas Epilepsy Society Auxiliary.

DR. NASH OPENS OFFICE IN STEPHENS

Dr. Dewayne Nash has opened the Stephens Family Practice Clinic at 113 North Ruby Street in Stephens.

DR. ETHERINGTON RETIRES

Dr. Robert Etherington of Eureka Springs has retired from the practice of medicine. A reception was held honoring Dr. Etherington on July 21st.

DR. BELL IN EUREKA SPRINGS

Dr. Dan Bell, a Family Physician, has joined Dr. William Finfrock at the Eureka Family Medical Center (formerly the Eureka Clinic). Dr. Bell has assumed the medical practice of Dr. Robert Etherington.

ARKANSAS CANCER RESEARCH CENTER FOUNDATION FUND

Dr. Kent Westbrook of Little Rock, medical director of the Arkansas Cancer Research Foundation Fund Board, and Dr. Harry Ward of Little Rock, Chancellor of the University of Arkansas College of Medicine, recently announced plans for a fundraising campaign. The Board plans to raise $5,000,000; the State (under Act 579) will match dollar for dollar every gift made in 1985 to the ACRC up to $1,000,000.

DR. HOWARD GRANTED MEMBERSHIP

Dr. Don G. Howard of Fordyce has been granted membership in the American College of Utilization Review Physicians.

DR. WATSON IN NEWPORT

Dr. Rodney Watson, a pediatrician, has opened an office in the Harris Hospital Professional Building at 1117 McLain in Newport.

DR. BLACK NAMED CHIEF

Dr. Hal Black of Little Rock has been named chief of staff at Baptist Medical Center in Little Rock. Dr. Hugh Burnett has been named vice chief and Dr. Lacy P. Fraiser has been named Chief of Surgery.

DR. RASCH APPOINTED

Dr. James Rasch of Little Rock has been appointed Medical Director of the Respiratory Therapy Department of the University of Arkansas for Medical Sciences. He has also accepted an appointment as Staff Physician for John L. McClellan Veterans Administration Hospital in Little Rock.

MARIANNA GAINS PHYSICIAN

Dr. Don Ball has opened an office at 100 West Main Street in Marianna for the practice of General Medicine.

RADIOLOGY OFFICERS

Dr. Robert Elliott of Searcy was elected president of the Arkansas Chapter of the American

College of Radiology during the Chapter's annual meeting. Other officers are: Dr. Howard Cockrill of Little Rock, president-elect; Dr. Marolyn Speer of Stuttgart, secretary-treasurer; Dr. Calvin Cassady of Fort Smith and Dr. Jerry Holton of Little Rock, American College of Radiology councilors; Dr. John Bell of Searcy as alternate councilor; and Dr. Doyne Dodd of Little Rock as councilor.

DR. BOX SIGNS CONTRACT

Dr. Ivan Box of Huntsville has signed a contract with Stonewall Jackson, a Grand Ole Opry artist, and Bobby Rich, a Nashville musician, to publish and perhaps record six of Dr. Box's songs. The two musicians have made demonstration records of the songs.

DR. MERKEL IN HERMITAGE

Dr. Fred Merkel has opened an office in Hermitage. Dr. Merkel is a Russellville native and a graduate of the Kirksville College of Osteopathic Medicine.

DR. FAIRLEY TAKES LEAVE OF ABSENCE

Dr. Eldon Fairley of Osceola was guest of honor at a coffee and tea at the Osceola Memorial Hospital. The reception was held as a farewell party for Dr. Fairley, who is taking a six-month leave of absence from his medical practice. He plans a four-week vacation in the British Isles and will resume a limited practice in January.

DR. MULHOLLAN ELECTED TO BOARD

Dr. James S. Mulhollan of Little Rock was elected as a member of the Board of Directors of the Arthroscopy Association of North America.

DR. FOSTER IN HOPE

Dr. Donald Foster, a Pediatrician, has joined The Children's Clinic in Hope.

DR. BINNS HONORED

Dr. Van C. Binns was honored with a reception by the citizens of Monticello. The City of Monticello presented Dr. Binns with a Distinguished Service Award and the First Baptist Church presented him with a plaque in recognition of his ministry to his country and community. He began practicing in Monticello in 1937.

DR. QUEVILLON ELECTED CHIEF OF STAFF

Dr. Robert Quevillon of Walnut Ridge is the newly-elected chief of staff at Lawrence Memorial Hospital. Dr. Ralph Joseph of Walnut Ridge is vice chief and Dr. Joe Hughes of Walnut Ridge is treasurer.

DR. REVARD LOCATES IN BENTONVILLE

Dr. Ron Revard, an Internist, has joined the Performance and Diagnostic Clinic in Bentonville.

DR. HOFFMAN SPEAKER

Dr. Carl Hoffman of Rogers discussed "Care of the Eyes for the Diabetic" at a class for diabetics sponsored by the Siloam Springs Memorial Hospital.

DR. RALPH JOSEPH, II, IN LITTLE ROCK

Dr. Ralph Joseph, II, has been appointed a staff physician at HealthAmerica in Little Rock and North Little Rock. He is the son of Dr. and Mrs. Ralph Joseph of Walnut Ridge.

DR. BAILEY SPEAKS AT TENNIS ASSOCIATION MEETING

Dr. H. A. Ted Bailey of Little Rock spoke on "Fundraising Keys and Mobilizing Community Resources for the School's Program" at the National Tennis Teachers Conference of the United States Tennis Association in New York City.

Dr. Bailey is also serving in other areas for the United States Tennis Association: as chairman of the Olympic Committee, a member of the Sports Medicine Committee and as a member of the Education, Research and Development Committee.

DR. STEPHEN MAGIE BEGINS PRACTICE

Dr. Stephen Magie has joined his father, Dr. J. J. Magie, at the Conway Ophthalmology Clinic at 1504 Caldwell in Conway.

DR. PEEPLES RESIGNS

Dr. George R. Peeples was guest of honor at a reception given by the Gurdon Municipal Hospital. He was presented a plaque in appreciation of his many years of service to the community. Dr. Peeples has resigned as chief of staff and as an active staff member of the Gurdon Municipal Hospital. He will continue in private practice and as a courtesy staff member of the Hospital.

DR. RODRIQUEZ LOCATES IN MORRILTON

Dr. Bart Rodriquez has joined the Twin Oaks Medical Clinic at 200 South Moose Street in Morrilton. Dr. Rodriquez specializes in Obstetrics-Gynecology.

DR. EASLEY HONORED

Dr. Edgar Easley of Little Rock received a plaque of appreciation from the American Lung Association for his 38 years of service to the organization.

Dr. Easley was also honored for his 38 years of distinguished service as a representative and director of Little Rock and Pulaski County. The mayor of Little Rock presented him with a plaque of appreciation and a gold pin from the Board of Directors of the City of Little Rock.

Dr. Easley is a Life Member of the Arkansas Medical Society and is a member of the Society's Fifty Year Club.

DOCTOR IN LEACHVILLE

Dr. Daniel Cummings, a Family Physician, has opened an office in Leachville.

DR. MAYNARD RETIRES AS SCHOOL PHYSICIAN

Dr. Ross E. Maynard of Pine Bluff retired as school physician at the Pine Bluff Boys Training School. He had held the position for 42 years.

DR. HARRIS IN GURDON

Dr. Robert Harris has opened an office in the Walnut Plaza Medical Center in Gurdon. Dr. Harris is a board certified Internist.

DR. GRAY SPEAKS

Dr. David P. Gray of Jonesboro spoke on "Cancer Screening" at a recent meeting of the Tuckerman Business and Professional Women's Club.

DR. JENNINGS LOCATES IN VAN BUREN

Dr. Charles Jennings has joined Dr. Henry N. Edwards at Suite 108 Medical Plaza in Van Buren for the practice of Internal Medicine.

DR. ABERNATHY IN FAYETTEVILLE

Dr. Bryan Abernathy has joined Dr. Carie D. Buckley at 956 South Ray Avenue in Fayetteville for the practice of Family Medicine.

DR. SNYDERMAN CHANGES STATIONS

Dr. Nancy Snyderman of Little Rock has joined KARK-TV, Channel 4, Little Rock. She will appear in connection with news programs with a series of short medical reports. Dr. Snyderman has done similar reports with KATV, Channel 7.

BENTON GAINS PHYSICIANS

Dr. Russell Burton has joined the Benton Family Clinic on a part-time basis. He is in his third year of Family Practice residency at the University of Arkansas College of Medicine.

Dr. Jay Marks has joined the Saline Memorial Hospital as Director of Emergency Medicine.

DR. BAILEY HONORED

Dr. Charles Bailey of Greenwood has been named Citizen of the Quarter by the Greenwood Chamber of Commerce. He was given the award because of his medical dedication and other community services.

SEMINAR SPEAKERS

Dr. Paul Desrochers of Fort Smith discussed "Anxiety as a Psychosomatic Disease" and Dr. Max Baker of Fort Smith discussed "Panic Disorder" at a seminar on "Anxiety, Panic and Fears" at the Harbor View Mercy Hospital in Paris. The seminar was co-sponsored by Westark Community College in Fort Smith.

DR. BEATON IN WYNNE

Dr. J. Trenton Beaton has joined the Wynne Medical Clinic specializing in Family Practice. He is the son of Dr. and Mrs. K. E. Beaton.

NEW CLINIC IN TUCKERMAN

Drs. Bruce Junkin, Hon K. Poon, and Tim Fisher of Newport are building a new clinic in Tuckerman. They will keep the clinic open Monday through Saturday and each will have scheduled days for practicing in Tuckerman.



NEW MEMBERS

DR. YOLAND M. CONDREY

Dr. Condrey, a native of Newport, has joined the Baxter County Medical Society.

She received her Bachelor of Arts degree in Sociology from the Arkansas State University, Jonesboro, in 1974 and attended the University of Arkansas in Fayetteville from 1974 to 1976.

Dr. Condrey is a 1982 graduate of the University of Arkansas College of Medicine. Her internship and residency were with the University of Arkansas College of Medicine and the Arkansas Children's Hospital.

Dr. Condrey specializes in Pediatrics. Her office is located at 400 South College, Suite 3, in Mountain Home.

DR. TONYA C. CLAYTOR

Dr. Claytor has joined the Benton County

Medical Society. She was born in Susquehanna, Pennsylvania.

Dr. Claytor is a 1975 graduate of North Carolina State University in Raleigh and a 1980 graduate of the University of North Carolina School of Medicine in Chapel Hill. Her internship and residency in Family Practice were with the Williamsport Hospital in Williamsport, Pennsylvania. Dr. Claytor is board certified in Family Practice.

She practiced Emergency Medicine at the Springdale Memorial Hospital in Springdale from 1983 to 1984. During the fall of 1983, she was an instructor in Emergency Medicine with the Area Health Education Center.

Dr. Claytor joined the staff of St. Mary's Hospital in Rogers in January 1985 where she specializes in Emergency Medicine and Family Practice. She is also associated with the University of Arkansas Student Health in Fayetteville.

DR. RANDALL E. COLE

Dr. Cole is another new member of the Benton County Medical Society. He is a native of Montgomery, Alabama.

His pre-medical education was with the University of Arkansas. He is a 1978 graduate of the University of Arkansas College of Medicine. Dr. Cole also served his internship and Ophthalmology residency at the University. He is board certified in Ophthalmology.

Dr. Cole practiced in Eustis, Florida, from 1983 to 1985.

He joined the Boozman-Hof Clinic in Rogers in February 1985 for the practice of Ophthalmology. Dr. Cole's mailing address is Post Office Box 1353, Rogers 72757.

DR. MICHAEL W. BROWN

Dr. Brown, a new member of the Jefferson County Medical Society, is a native of Pine Bluff.

He was graduated in 1975 from the University of Arkansas in Fayetteville and from the University of Arkansas College of Medicine in 1979. His internship and Neurosurgery residency were with the University Hospital.

Dr. Brown entered private practice in July of 1985 and specializes in Neurosurgery. His office is at 1801 West 40th, Suite 4A, Pine Bluff.

DR. CHARLES N. THORNTON

Dr. Thornton has joined the Miller County Medical Society. He was born in Little Rock.

Dr. Thornton is a 1978 graduate of the University of Arkansas at Fayetteville and a 1980 graduate of the University of Arkansas College of Medicine. His internship and residency were with the University.

He has joined the Collom and Carney Clinic at 4800 Texas Boulevard in Texarkana for the practice of Ophthalmology.

DR. D. ANDREW HENRY

Dr. Henry, a native of Russellville, has joined the Pope County Medical Society.

He is a 1976 graduate of Rice University in Houston, Texas, and a 1979 graduate of the University of Arkansas College of Medicine. Dr. Henry served his internship, residency, and a three-year Cardiology fellowship at the University. He also served as an instructor of Medicine at the University. Dr. Henry is board certified in Internal Medicine.

Dr. Henry has joined the Millard-Henry Clinic at 3105 West Main Place in Russellville for the practice of Cardiology.

DR. CARL MICHAEL RIDDELL

Dr. Riddell is another new member of the Pope County Medical Society. He was born in Brinkley.

His pre-medical education was with Hendrix College in Conway and the University of Arkansas in Little Rock. He is a 1981 graduate of the University of Arkansas College of Medicine. Dr. Riddell served his internship and residency with the Louisiana State University Medical Center in Shreveport. He is board certified in Obstetrics-Gynecology.

Dr. Riddell has joined the Millard-Henry Clinic at 3105 West Main Place in Russellville for the practice of Obstetrics and Gynecology.

* * * *

The Pulaski County Medical Society has ten new members:

DR. KEVIN D. BAY

Dr. Bay, a native of Bonne Terre, Missouri, received his pre-medical training at the University of Arkansas in Fayetteville and the University of South Carolina in Columbia. He was graduated from the University of Arkansas College of Medicine in 1982.

His training in Family Practice was with the University of Arkansas Medical Center. He took his board examination for the specialty in July.

Dr. Bay has joined the Sherwood Family Clinic at 1308 East Kiehl Avenue for the practice of Family Medicine.

DR. JOHN T. CHEAIRS

Dr. Cheairs, a native of Little Rock, was grad-

uated from Washington and Lee University in Lexington, Virginia, in 1977. He is a 1982 graduate of the University of Arkansas College of Medicine.

Dr. Cheairs served a flexible internship and Anesthesiology residency at the University.

He has joined the Arkansas Anesthesia, P.A., at 9601 Lile Drive in Little Rock.

DR. MICHAEL J. CONE

Dr. Cone was born in Shreveport, Louisiana. He is a 1975 graduate of Baylor University in Waco, Texas, and a 1979 graduate of the Louisiana State University School of Medicine in Shreveport.

He served his internship and a residency in Pediatrics at the University of Arkansas College of Medicine. Dr. Cone served a Neonatal-Perinatal Fellowship from 1982 to 1984 at Baylor College of Medicine in Houston, Texas. He has taken the required examinations for certification by the American Board of Pediatrics.

Dr. Cone specializes in Neonatology. His office is in Suite 340 of the Medical Towers Building in Little Rock.

DR. BYRON L. EYRE

Dr. Eyre, a native of Alexandria, Louisiana, is a graduate of the Louisiana State University in Baton Rouge and a 1980 graduate of Louisiana State University School of Medicine in Shreveport.

He trained in Surgery with the University of Mississippi Medical Center in Jackson from 1980 to 1981 and in Anesthesiology at the University of Arkansas College of Medicine from 1981 to 1983.

Before moving to Little Rock, Dr. Eyre was associated with St. Michael Hospital in Texarkana.

Dr. Eyre specializes in Anesthesiology. His office is at 2800 Percy Machin in North Little Rock.

DR. RANDAL F. HUNDLEY

Dr. Hundley, a native of Philadelphia, is a 1975 graduate of Hendrix College in Conway and a 1979 graduate of Vanderbilt University School of Medicine in Nashville, Tennessee. His internship and residency in Internal Medicine were also at Vanderbilt.

Dr. Hundley served a fellowship in Cardiology at Harvard University and Brigham and Women's Hospital in Boston, Massachusetts, from 1982 to 1985. He is board certified in Internal Medicine.

He has joined the Cardiac Diagnostic Clinic in Suite 360 of the Doctors Park Building, 9600 Lile Drive, Little Rock, for the practice of Cardiology.

DR. RANDY A. JORDAN

Dr. Jordan was born in Great Falls, Montana. He is a 1974 graduate of Northwestern University in Evanston, Illinois, and a 1979 graduate of the University of Arkansas College of Medicine.

His Internal Medicine internship and residency were with the Louisiana State University Hospital in Shreveport. Dr. Jones also served one year as a Cardiology Fellow at the LSU Hospital and two years as a Cardiology Fellow at the University of Arkansas College of Medicine. He is board certified in Internal Medicine.

Dr. Jordan practices Cardiovascular Diseases at 690 Medical Towers Building in Little Rock.

DR. STEVEN J. KULBECK

Dr. Kulbeck was born in Steubenville, Ohio. He received his Bachelor of Arts degree from the University of Alabama in Tuscaloosa in 1975. He is a 1978 graduate of the University of Tennessee College of Medicine in Memphis.

Dr. Kulbeck's training in Internal Medicine was with Carraway Methodist Medical Center in Birmingham. He is board certified in Internal Medicine.

He specializes in Internal Medicine. Dr. Kulbeck's mailing address is Post Office Box 5457, Jacksonville.

DR. ROBERT W. LAAKMAN

Dr. Laakman, a native of Indianapolis, Indiana, was graduated from Indiana University in Bloomington in 1976. He is a 1980 graduate of the Washington University School of Medicine in St. Louis, Missouri.

Dr. Laakman trained with the Mallinckrodt Institute of Radiology in St. Louis, Missouri, from 1980 to 1984. He served a fellowship in Magnetic Resonance Imaging at the Case Western Reserve University Affiliated Hospitals in Cleveland, Ohio. He is board certified in Radiology.

Dr. Laakman has joined Radiology Associates at 500 South University in Little Rock.

DR. ANN SHARON MEADOR

Dr. Meador was born in Jonesboro. Her premedical education was with Southwestern College in Memphis, Tennessee. She is a 1979 graduate of the University of Arkansas College of Medicine.

Dr. Meador served a flexible internship with the University of Arkansas College of Medicine and a Neurosurgery residency with the Medical University of South Carolina in Charleston.

Dr. Meador was formerly with St. Bernard's

Hospital in Jonesboro and Ouachita Hospital in Hot Springs for the practice of Emergency medicine.

Dr. Meador is affiliated with Teletype Corporation in Little Rock, specializing in Occupational Medicine, and with Sherwood Hills Family Medical Center, specializing in Family Practice. Her mailing address is 7709 Highway 107, Sherwood 72116.

DR. JOHN M. STAIR

Dr. Stair was born in Fort Smith. He is a 1975 graduate of the University of Arkansas in Fayetteville and a 1979 graduate of the University of Arkansas College of Medicine.

His training in Surgery was with University Hospital in Little Rock. He is board certified in Surgery.

Dr. Stair practices at 2007 Fendley Drive in North Little Rock.

DR. BERT DOUGHERTY

Dr. Dougherty, a new member of the Union County Medical Society, is a native of El Dorado.

He is a 1975 graduate of the University of North Carolina in Chapel Hill and a 1978 graduate of the University of Texas Medical School in Houston. His training in Pathology was in Houston with the Hermann Hospital, St. Luke's Episcopal Hospital, and the M. D. Anderson Hospital and Tumor Institute. Dr. Dougherty is board certified in Pathology. He is a Clinical Associate with the El Dorado AHEC.

Dr. Dougherty has joined the Associated Pathologists Laboratory at 443 West Oak in El Dorado for the practice of General Pathology.

* * * *

RESIDENT MEMBER

DR. MARY B. WINBURN

Dr. Winburn, a 1954 graduate of the University of Arkansas College of Medicine, is serving a Neurology residency with the University.

OBITUARY

DR. BERNARD CAPES

Dr. Capes of West Helena died July 30, 1985. He was born October 29, 1913, in St. Louis, Missouri.

His premedical education was with Washington University in St. Louis, Missouri. He received a Bachelor of Science in Medicine from the University of Missouri School of Medicine in 1938 and a Doctor of Medicine degree from the University of Arkansas College of Medicine in 1942.

Dr. Capes served with the Army during World War II.

He is survived by his son and one daughter.

DR. RALPH CRIGLER

Dr. Ralph Crigler of Fort Smith died July 11, 1985. He was born July 14, 1908, in Walnut Ridge. He lived in Alma before beginning practice in Fort Smith.

He received a Bachelor of Science degree in 1930 from the University of Arkansas at Fayetteville. He was a 1935 graduate of the Washington University School of Medicine in St. Louis, Missouri. Dr. Crigler was in training with St. Luke's Hospital in St. Louis from 1935 until 1937.

Dr. Crigler joined the Holt-Krock Clinic in 1937 for the practice of Proctology and General Surgery. He also served as physician to the Kroger Grocery and Baking Company of Fort Smith.

He served for fourteen years on the Board of Directors of Sparks Regional Medical Center and was a lifetime honorary member of the Board. Dr. Crigler had also served as secretary and president of the Sebastian County Medical Society. He was a member of the Fifty Year Club of the Arkansas Medical Society and a life member of the Medical Society and the American Medical Association.

Dr. Crigler was an active member of the Fort Smith Boys' Club for thirty years. He received the Bronze Keystone Award from the Boys' Club

of America in 1956 and the Big-Little American Award for his efforts with the Fort Smith Club.

He had served as a member of the Salvation Army Advisory Board and was honored in 1960 by the Salvation Army with the Citizens Service Award. He had served as a member of the Board of the Junior Chamber of Commerce and received the 1941 Distinguished Service Award from the Junior Chamber. Dr. Crigler also served for 14 years on the Sebastian County Welfare Board of Directors and the board of the State Sanitorium. He had served as a member of the Fort Smith School Board. He was a member of the Kiwanis Club for 38 years, receiving the Legion of Honor for 25 years of service to the Club.

Dr. Crigler was a member of the Fort Smith Community Chest (the forerunner of the United Way) for 25 years and served as president and campaign chairman. He had served on the Board of the United Federal Savings and Loan Association for 25 years. In 1956, Dr. Crigler received the Golden Deeds Award from the Fort Smith Exchange Club.

He was also a member of the Belle Point Lodge No. 20, the Western Arkansas Scottish Rite Consistory, and an Honorary 33rd Degree of the Scottish Rite Bodies. Dr. Crigler was a member of the York Rite Bodies and had received the Red Cross of Constantine Honorary Degree. He was also a Shriner and member of the Amritta Grotto.

Dr. Crigler was active in the work of the Goddard Memorial Methodist Church where he served on the Board of Stewards and as past president of the Board. He had also served as a member of the First United Methodist Church Board of Stewards and the church finance committee.

Dr. Crigler is survived by his wife, Cora Crigler, and two sons.

Memorials have been established with the Sparks Foundation of Fort Smith and the First United Methodist Church of Fort Smith.

DR. JOHN W. HARPER

Dr. Harper of El Dorado died August 7, 1985. He was born March 12, 1911.

He was a 1934 graduate of the University of Arkansas College of Medicine. Dr. Harper served with the United States Navy during World War II and was a commander in the Naval Reserve. He was also a Shriner.

Dr. Harper is survived by his wife, Virginia Greenhaw Harper, two daughters, a son who is a physician (Dr. William Lee Harper of El Dorado), and another son.

DR. NICHOLAS T. HOLLIS

Dr. Hollis of Little Rock died July 29. He was born November 15, 1900, in Little Rock.

His premedical education was with Hendrix College in Conway. He was a 1935 graduate of the University of Arkansas College of Medicine. His internship was with St. Vincent's Infirmary in Little Rock.

Dr. Hollis was a staff member of the Arkansas State Hospital in Little Rock for eleven years. He introduced insulin and electroshock therapy in the State. After leaving the State Hospital staff, Dr. Hollis entered private practice in Little Rock and was active in organizing Alcoholic Anonymous in the South. He was a life Fellow of the American Psychiatric Association. He had served as a member of the Board of Directors of Peoples Savings and Loan, and was a former chairman of the Board of Stewards of the Winfield United Methodist Church.

DR. JOE B. SCRUGGS

Dr. Scruggs died August 8; he was born December 29, 1921, in Hope and reared in Gurdon. Dr. Scruggs was living in Heber Springs at the time of his death.

He attended Henderson College in Arkadelphia. He received a Bachelor of Science in Medicine and Doctor of Medicine from the University of Arkansas College of Medicine. His internship was with City Hospital in Winston-Salem, North Carolina. Dr. Scruggs served with the United States Army from 1946 to 1948 and from 1950 to 1951. He returned to Arkansas for a residency in Radiology with the University Hospital. He began practice in Little Rock with Dr. Joe Calhoun and Dr. Ed Gray upon completion of his residency. Dr. Scruggs was board certified in Radiology in 1953.

In 1952, Dr. Scruggs formed and became head of the Radiology Department of Baptist Hospital. In 1969 he served as chief of staff at Baptist. He helped found the Baptist System School of Radiography.

Dr. Scruggs was also one of the founders of the Central Arkansas Radiation Therapy Institute (CARTI), served on the incorporation board of CARTI and then served two terms on the Institute's Board of Directors.

Dr. Scruggs moved to Heber Springs in 1974

and served as Radiologist at the Cleburne County Hospital for ten years.

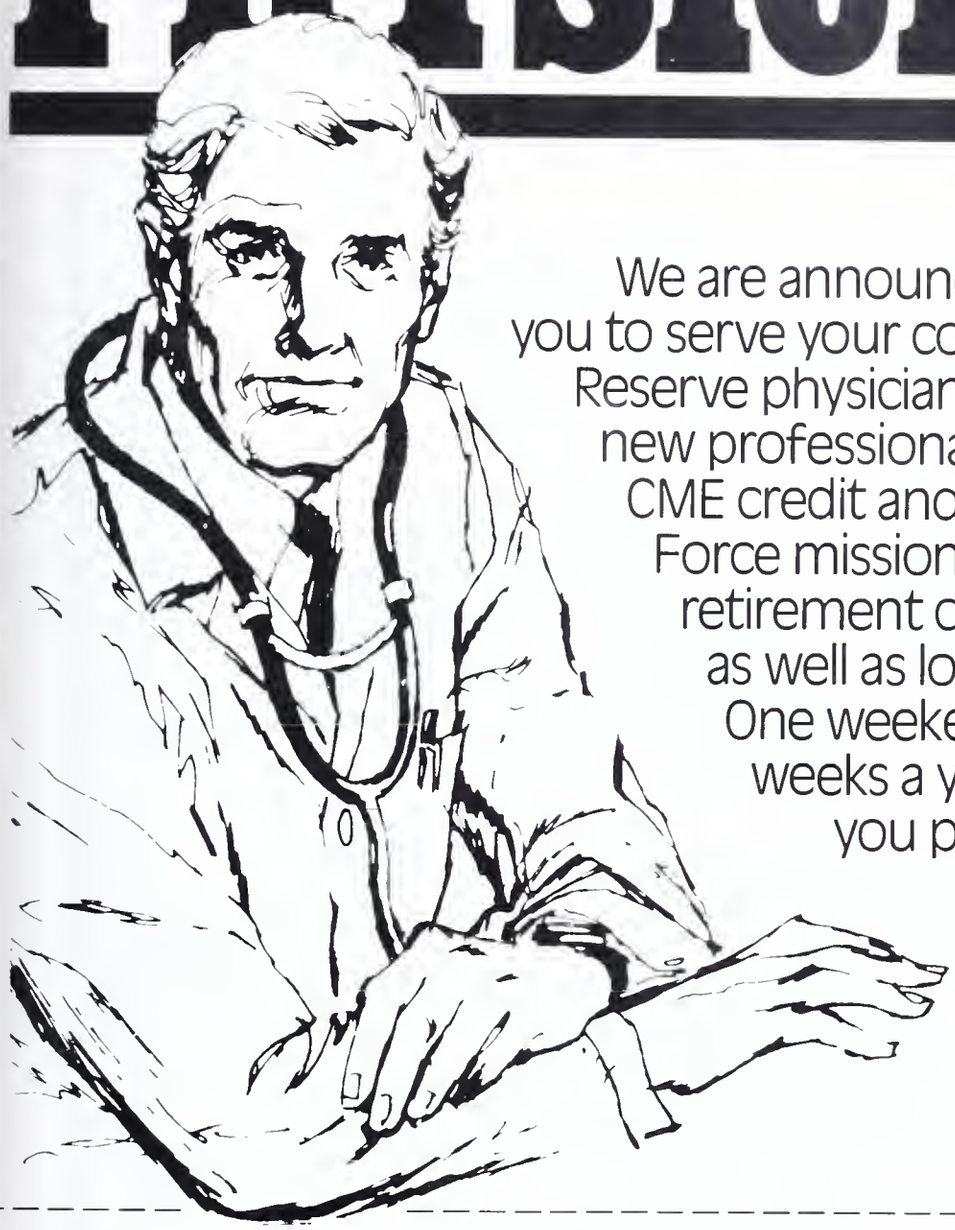
Dr. Scruggs was a member of the Board of Trustees of the Baptist Medical System, the Board of Deacons of the First Baptist Church of Heber Springs, the Board of Directors of Young Life, and an officer of the Ozark Conference. He was a former member of the Kiwanis Club.

He is survived by his wife, Jessie Faye Wright Scruggs, his son Dr. Jan Scruggs, two other sons, and a daughter.

Memorials may be made to the Baptist Health Foundation, the First Baptist Church of Heber Springs or CARTI.



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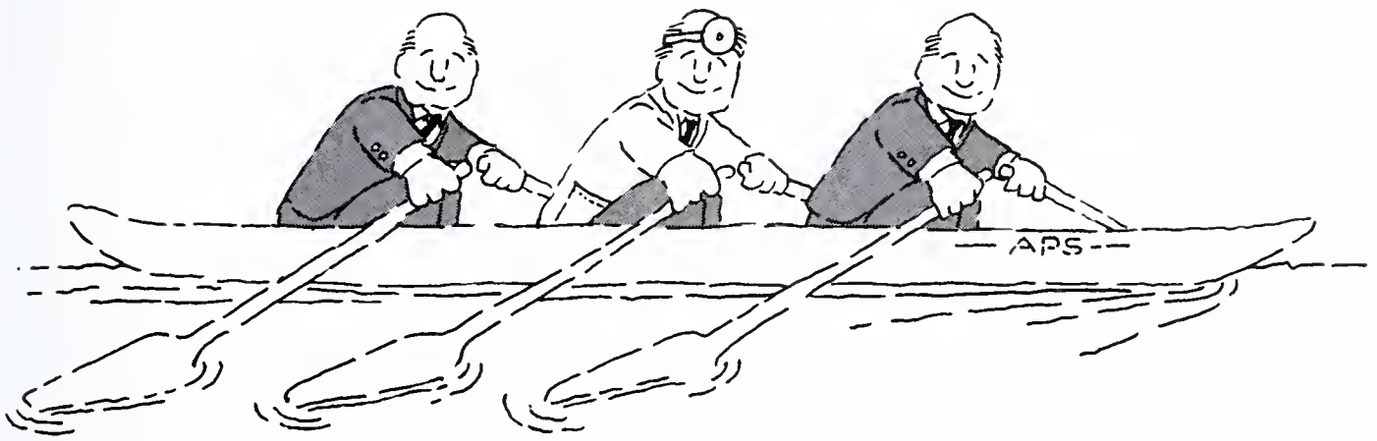
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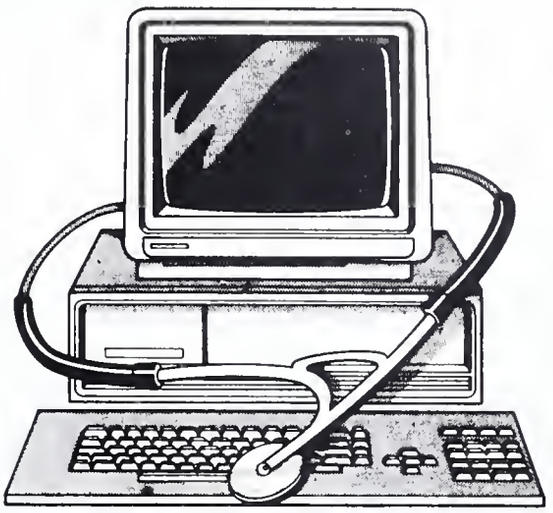
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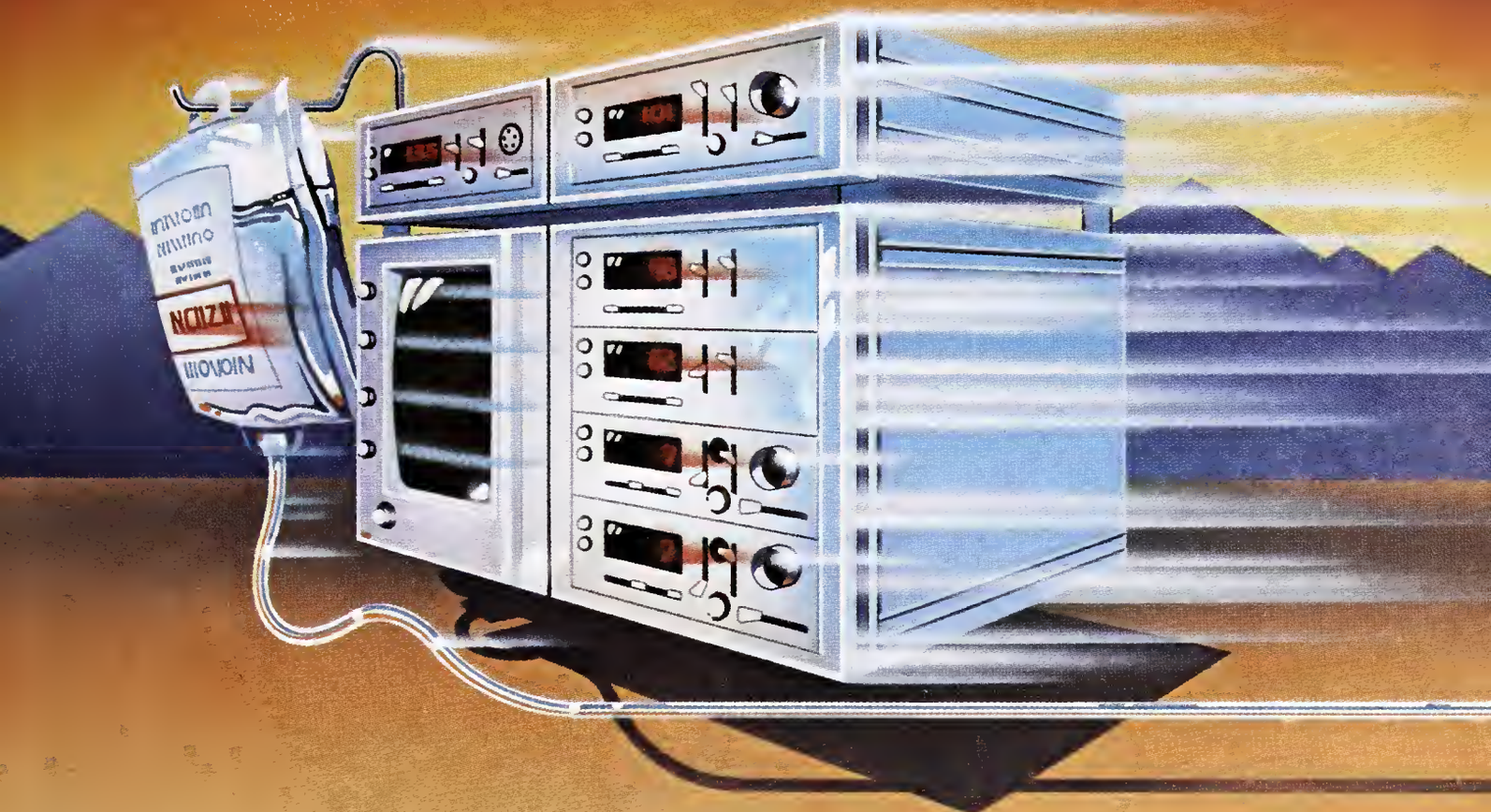
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POCAHONTAS. An excellent opportunity exists for two or three family practitioners in this northeast Arkansas community of 6,000. Trade area population approximately 25,000. One family practitioner retired in March 1985, one retiring in September 1985, and another retiring later this year. The family practitioner's clinic is now available for a minimal investment for a family practitioner ready to assume a busy practice.

Pocahontas has a new 50-bed general hospital staffed by a radiologist, two board certified general surgeons, one cardiologist and seven family practitioners. The hospital also has a part-time orthopaedist, urologist, and pathologist. There is full-time emergency room coverage at night, weekends, and all holidays.

CHEROKEE VILLAGE. Population 4,500, county population of 14,600, Cherokee Village is located in the scenic foothills of the Ozark Mountains. Opportunity exists for a general surgeon with financial arrangements tailored to the needs of the physician. There are currently three family physicians in the community. The Baptist Memorial Hospital—Eastern Ozarks has 10 acute care beds and 60 long-term care beds. The hospital has a well equipped emergency room and a comprehensive range of support services. Tertiary care and continuing medical education are located an hour away in Jonesboro which is the regional medical center for northeast Arkansas.

HEBER SPRINGS. Population 5,000 with a rapidly growing county population of approximately 18,000. Opportunities exist for a general internist and family practitioner. The community has a 54-bed hospital and there are two nursing homes in the area. Heber Springs is 70 miles north of Little Rock, located in the beautiful hills of northcentral Arkansas on Greers Ferry Lake.

MANILA. Opportunities exist in Manila for physicians in the fields of general practice, family practice and/or internal medicine. Manila, population 2,600, is serviced by the Buffalo Island Community Hospital, a 32-bed primary care facility. National Health Care, the owners of the hospital, offer a substantial first year salary, office space at no charge for one year and funds for necessary office personnel. Reasonable moving expenses will be paid. The hospital has on its staff physicians who practice in Leachville, Monette and Caraway, each approximately 10 miles away. Other hospitals are in Jonesboro, approximately 35 miles away, Osceola and Blytheville approximately 18 miles away.

MARIANNA. Population 6,100; trade area population about 20,000. Opportunities exist in family practice, general practice, and internal medicine. Office space is available. Opportunities exist for private practice or join a government funded clinic on a salaried basis. There is a 25-bed acute care hospital in Marianna.

WALNUT RIDGE/HOXIE. Population 8,100; trade area population 15,000. Walnut Ridge is 90 miles northwest of Memphis, Tennessee. Opportunities exist for an orthopaedic surgeon, radiologist, obstetrician/gynecologist, pediatrician and an emergency medicine physician. Physicians would receive the complete cooperation from the hospital, medical staff and commmunity. Group practice is available. Walnut Ridge/Hoxie presently has four family practitioners, one general surgeon, and one internist. Lawrence Memorial Hospital in Walnut Ridge is a 48 bed, general-acute facility, fully accredited by JCAH.

MENA. Population 5,132; county population 16,984. Mena is 82 miles from Fort Smith and 77 miles from Hot Springs, where most specialties are represented. There is very good opportunity for practice in Mena. The town presently has four family practitioners, three general practitioners, and one radiologist. The doctors feel there is a desperate need for specialists, i.e., surgeons, internists, obstetricians/gynecologists, orthopaedists, pediatricians, urologists, and family practitioners. There is a new 57 bed, all private rooms, accredited general hospital in Mena and two nursing homes with a total bed capacity of 174.

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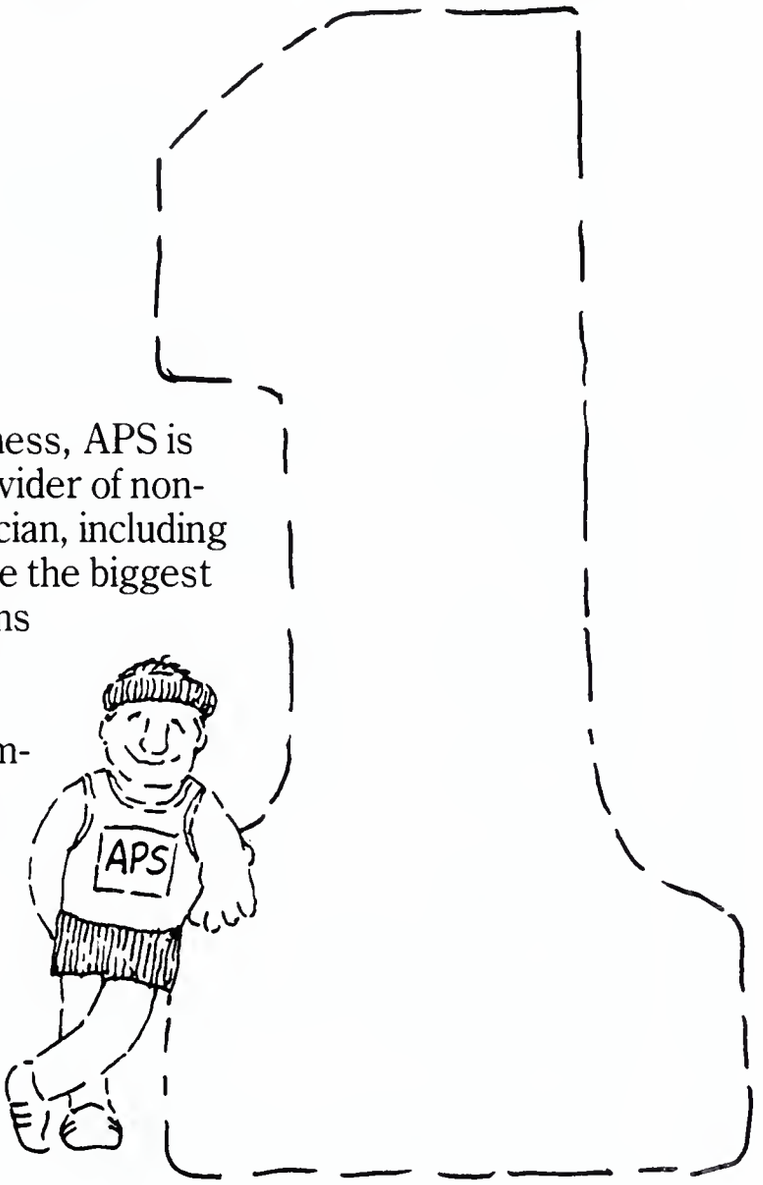
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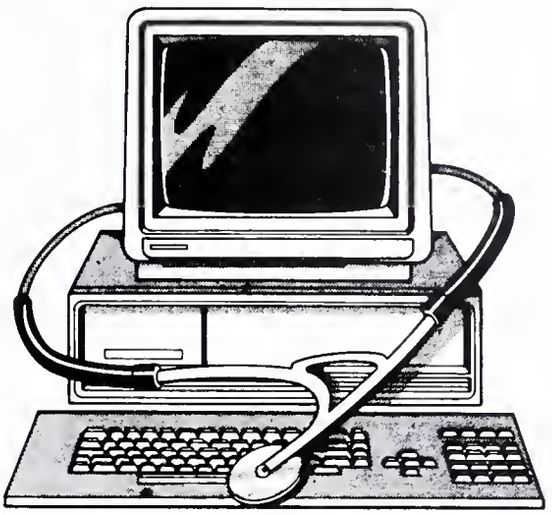
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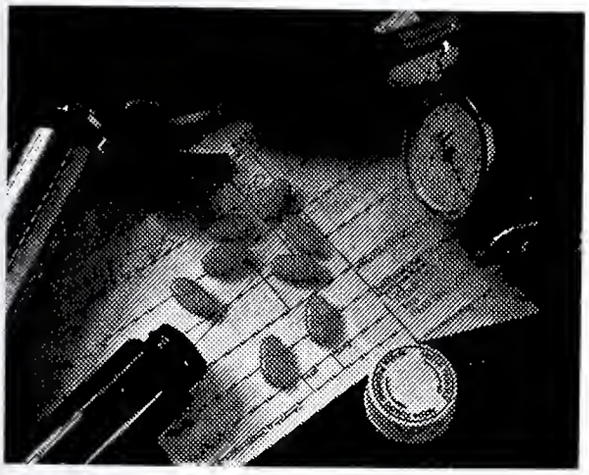
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ARKANSAS MEDICINE TODAY



TB kids on fast track

Children's tuberculosis is being successfully treated in Arkansas with just one month of doily isoniozid and rifampin, followed by eight months of semiweekly treatments, reports Dr. Rosalind S. Abernathy of the University of Arkansas, Little Rock.[1] In addition to halving treatment time, the new TB therapy reduces drug costs by three-fourths. Most symptoms cleored in a few weeks, remarks Dr. Abernathy, and all cultures were negative in two months.[2] This is especially significant because in 1981, 1,681 of the 27,373 new known U.S. TB victims were under 14 yeors old. And it's in the tradition of Arkansas medicine, which pioneered the adult nine-month TB therapy.[1]

More than a pipe dream

Inhalation patterns may determine why cigarette smokers have higher incidences of carcinoma of the lung, emphysema and heort disease than pipe smokers. Researchers at the University of Arkansas for Medical Sciences and the Little Rock VA Medical Center found that pipe smokers who had never smoked cigorettes inhaled only minimally.[3] This was evidenced by low plasma nicotine concentrations after pipe smoking. By contrast, those who smoked both pipes and cigorettes had high plasma nicotine levels and therefore must have inhaled pipe smoke. Most former cigarette smokers who had switched to pipes had low plasma nicotine, indicating they had stopped inhaling. This suggests that some individuols can indeed reduce the risks of smoking by switching to a pipe. You can determine whether they've stopped inhaling by checking their plasma nicotine or carboxyhemoglobin.

References: **1.** *Medical World News,* Mor 14, 1983, p. 126
2. Abernathy RS, *et al. Pediatrics 72*:801-86, Dec. 1983.
3. McCusker K, McNobb E, Bone R *JAMA 248*:577-578, Aug 6, 1982.

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*Feighner JP, *et al. Psychopharmacology 61*:217-225, Mar 22, 1979.

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Warnings: Use with great care in patients with history of urinary retentian ar angle-clasure glaucoma. Severe canstipatian may occur in patients taking tricyclic antidepressants and antichalinergic-type drugs. Clasely supervise cardiavoscular patients (Arrhythmias, sinus tachycardia and pralongatian af canduction time reported with use at tricyclic antidepressants, especially high doses. Myacardial infarctian and stroke reparted with use of this class of drugs.) Coutian patients abaut passible cambined effects with alcohol and other CNS depressants and against hazardaus occupatians requiring complete mental alertness (e.g., operating machinery, driving).

***Usage in Pregnancy:* Use of minor tronquilizers during the first trimester should almost always be avaided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Since physical and psychological dependence ta chlardiazepaxide have been reparted rarely, use cautian in administering Limbitral ta addictian-prane individuals or thase wha might increase dasage, withdrawal symptams fallowing discantinuatian of either campanent alane have been reported (nausea, headache and malaise for amitriptyline; symptams [including canvulsions] similar ta those of barbiturate withdrawal far chlardiazepaxide).
Precautions: Use with cautian in patients with a history of seizures, in hyperthyraid patients or thase on thyroid medicatian, and in patients with impaired renal or hepatic function. Because af the possibility af suicide in depressed patients, do not permit easy access ta large quantities in these patients. Periodic liver function tests and blood caunts are recammended during pralanged treatment. Amitriptyline campanent may block action af guanethidine ar similar antihypertensives. Cancamitant use with other psychatropic drugs has nat been evaluated; sedative effects may be additive. Discantinue several days before surgery. Limit cancamitant administratian af ECT ta essential treatment. See Warnings for precautions abaut pregnancy. Limbitral shauld not be taken during the nursing period. Not recammended in children under 12. In the elderly and debilitated, limit ta smallest effective dasage ta preclude ataxia, aversedatian, canfusian or antichalinergic effects.
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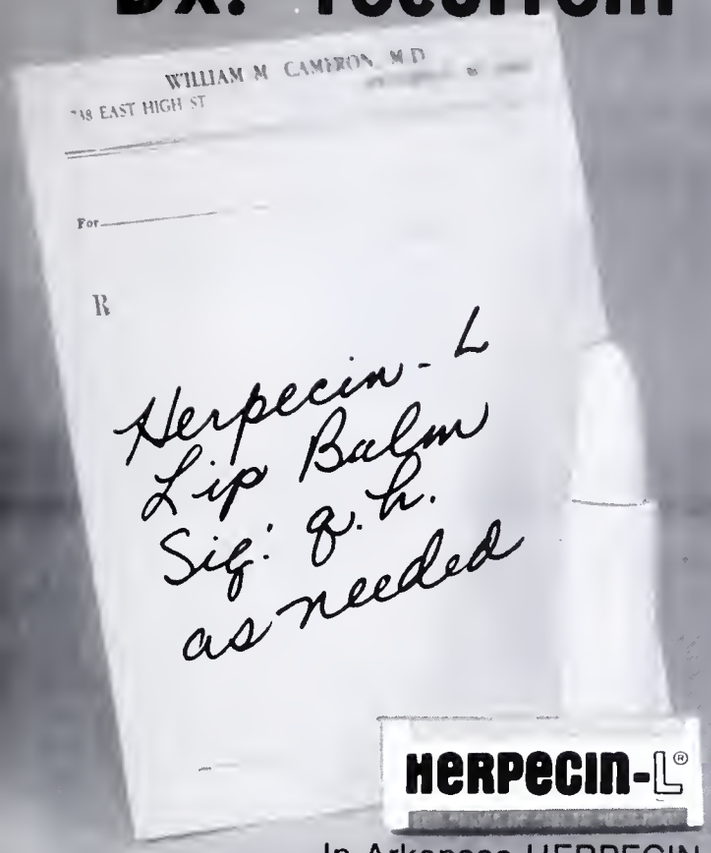
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This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

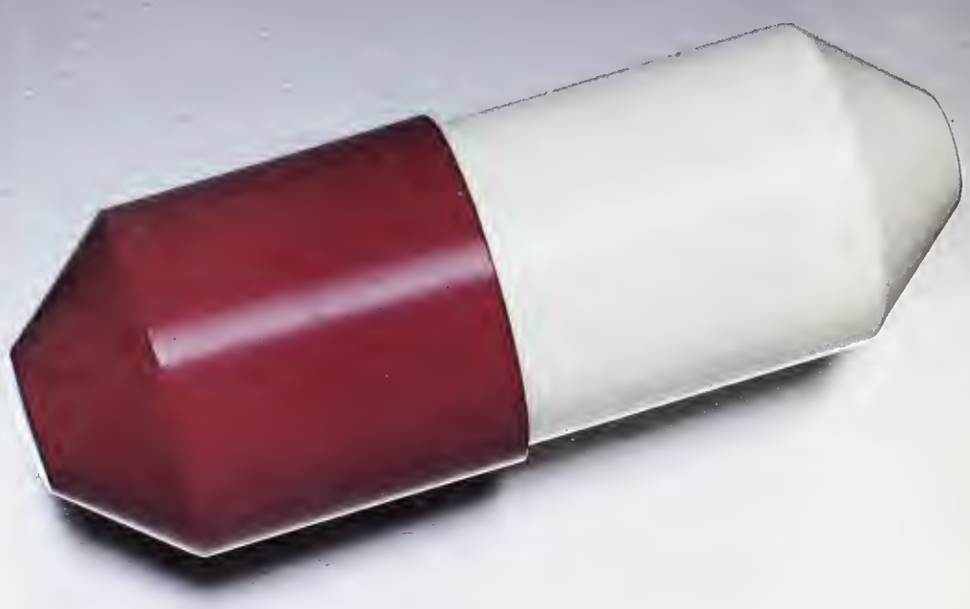
Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

BRS-DZ:L39

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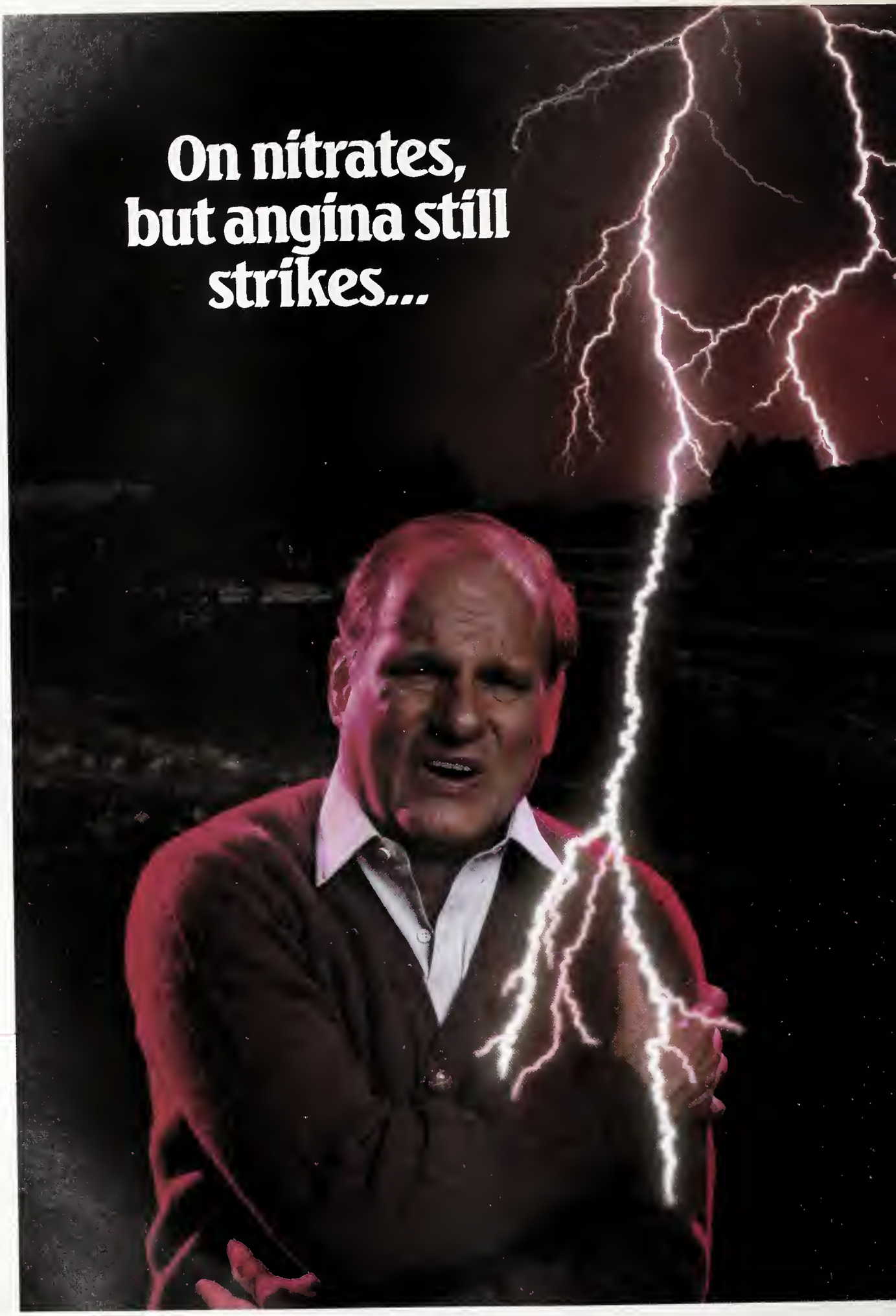


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Cardiovascular contraindications to the use of Isoptin are similar to those of beta blockers: severe left ventricular dysfunction, hypotension (systolic pressure <90 mm Hg) or cardiogenic shock, sick sinus syndrome (if no artificial pacemaker is present) and second- or third-degree AV block.

So, the next time a nitrate is not enough, add Isoptin... for more comprehensive antianginal protection without side effects which may cramp an active life style.



ISOPTIN. Added antianginal protection without beta-blocker side effects.

Please see brief summary on following page.

ISOPTIN®
(verapamil HCl/Knoll)
80 mg and 120 mg scored, film-coated tablets

Contraindications: Severe left ventricular dysfunction (see *Warnings*), hypotension (systolic pressure < 90 mm Hg) or cardiogenic shock, sick sinus syndrome (except in patients with a functioning artificial ventricular pacemaker), 2nd- or 3rd-degree AV block. **Warnings:** ISOPTIN should be avoided in patients with severe left ventricular dysfunction (e.g., ejection fraction < 30% or moderate to severe symptoms of cardiac failure) and in patients with any degree of ventricular dysfunction if they are receiving a beta blocker. (See *Precautions.)* Patients with milder ventricular dysfunction should, if possible, be controlled with optimum doses of digitalis and/or diuretics before ISOPTIN is used. (Note interactions with digoxin under *Precautions*.) ISOPTIN may occasionally produce hypotension (usually asymptomatic, orthostatic, mild and controlled by decrease in ISOPTIN dose). Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C*: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings*.) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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24-hour blood pressure control with the broad benefits of INDERAL (propranolol HCl)

The controlled-release delivery system of INDERIDE LA provides 24-hour beta blockade and the broad cardiovascular benefits of INDERAL with a single daily dose. Compliance is enhanced because once-daily administration fits easily into patients' daily routines.

Plus standard-release hydrochlorothiazide, the thiazide of choice for comfortable morning diuresis

Hydrochlorothiazide is the world's most widely prescribed antihypertensive diuretic. When taken in the morning, INDERIDE LA provides comfortable morning diuresis. Each dosage strength of INDERIDE LA contains:

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—an established, effective daily dose of standard-release hydrochlorothiazide—50 mg

New once-daily

INDERIDE® LA

Each capsule contains propranolol HCl (INDERAL® LA), 80 mg, 120 mg, or 160 mg, and hydrochlorothiazide, 50 mg

Convenience without compromise



80/50 120/50 160/50*

*The appearance of INDERIDE® LA Capsules is a registered trademark of Ayerst Laboratories.

Please see following page for brief summary of prescribing information.

Once-daily
INDERIDE® LA

Convenience without compromise
One capsule—Once daily



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℞ Inderide LA 80/50 #100 Sig: 1 cap daily

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BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)*

INDERIDE® LA Brand of **PROPRANOLOL HYDROCHLORIDE (INDERAL® LA) and HYDROCHLOROTHIAZIDE (Long Acting Capsules)**

No. 455—Each INDERIDE® LA 80/50 Capsule contains	
Propranolol hydrochloride (INDERAL® LA)	80 mg
Hydrochlorothiazide	50 mg
No. 457—Each INDERIDE® LA 120/50 Capsule contains	
Propranolol hydrochloride (INDERAL® LA)	120 mg
Hydrochlorothiazide	50 mg
No. 459—Each INDERIDE® LA 160/50 Capsule contains	
Propranolol hydrochloride (INDERAL® LA)	160 mg
Hydrochlorothiazide	50 mg

INDERIDE LA is indicated in the management of hypertension.

This fixed-combination drug is not indicated for initial therapy of hypertension. If the fixed combination represents the dose titrated to the individual patient's needs, therapy with the fixed combination may be more convenient than with the separate components.

CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL®):

Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide:

Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL®):

CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned, the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patients should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide:

Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL®):

GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide:

GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance: namely, hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS: Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL®):

Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular. Bradycardia, congestive heart failure, intensification of AV block, hypotension, paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System. Lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia; visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal. Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic. Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory. Bronchospasm.

Hematologic. Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune. In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous. Alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal. Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation; jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System. Dizziness, vertigo, paresthesias, headache, xanthopsia.

Hematologic. Leukopenia, agranulocytosis; thrombocytopenia, aplastic anemia.

Cardiovascular. Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity. Purpura, photosensitivity, rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other. Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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Evaluation of Clinical Pharmacokinetic Services Provided to Children and Adolescents with Cystic Fibrosis

Gregory L. Kearns, Pharm. D.,* Jorge F. Jimenez, M.D.,** Allen L. Brown, Pharm. D.,*** and Robert H. Warren, M.D.****

INTRODUCTION

Children and adolescents with cystic fibrosis (CF) represent a subset of patients with respect to the pharmacokinetics and dosing requirements for aminoglycoside antibiotics.[1-3] Since these patients often require frequent treatment courses of high-dose aminoglycoside therapy, it has been recommended that dosing regimens be individualized using patient-specific pharmacokinetic parameters, and that therapy be monitored for safety and efficacy by repeated examination of serum drug levels.[3]

Prospective reimbursement programs (e.g., DRGs) have identified unnecessary laboratory testing as a priority for reducing health care costs.[4] By their very nature, clinical pharmacokinetic services center around the interpretation and use of serum drug level determinations. Historically, these services provided to adult patients have resulted in the improved use of laboratory facilities and personnel[5] as well as institutional cost savings.[6] Despite the purported attributes of clinical pharmacokinetic services, they can be expected to fall under close scrutiny to prove that both the process and outcome (e.g., cost) of health care is favorably affected by their implementation and use within an institution.[4]

The literature is replete with studies which evaluate clinical pharmacokinetic services provided to pediatric patients. A retrospective study performed in children with asthma revealed that as the availability of serum theophylline level determinations increased, their utilization increased without an effect on the duration of hospitalization or incidence of theophylline toxicity.[7] This study did not evaluate the impact of a clinical pharmacokinetic service provided to children with asthma, however. To assess the impact of a clinical pharmacokinetic service on the provision of antibiotic therapy to pediatric patients, we evaluated such a service provided to patients with CF who were receiving tobramycin therapy.

Methodology

From May 1983 to April 1, 1984, 16 consultations were performed by the clinical pharmacokinetic monitoring service (CPMS) at the Arkansas Children's Hospital for the purpose of individualizing tobramycin therapy in patients with CF. These consultations represented data from 14 patients and served as the "study population" for our retrospective analysis. The "control group" for our investigation consisted of medical records for 25 children with CF admitted to our institution between June 1, 1980, and May 1, 1983, for therapy of pulmonary exacerbations which included tobramycin. Selection of medical records for inclusion in the control group were based on documented evidence of serum tobramycin levels being performed during a course of therapy. Control group admissions represented a time period when the CPMS was not active at the Arkansas Children's Hospital. Once appropriate records for the control group were identified, admissions selected for study review were made at random. This provided a study sample of 41 hospital admissions (study group, $n = 16$; control group, $n = 25$) for tobramycin therapy and serum level monitoring in children/adolescents with CF.

*Assistant Professor of Pharmaceutics and Pediatrics, UAMS; Head, Clinical Pharmacokinetic Monitoring Service, Arkansas Children's Hospital.
**Associate Professor of Pediatrics and Pathology, UAMS; Chief, Division of Pediatric Pathology and Medical Director, Clinical Pharmacokinetic Monitoring Service, Arkansas Children's Hospital.
***Associate Professor of Pharmacy Practice and Pediatrics, UAMS; Clinical Pharmacist, Arkansas Children's Hospital.
****Associate Professor of Pediatrics, UAMS; Chief, Division of Pediatric Pulmonology, Arkansas Children's Hospital.

Address correspondence and reprint requests to: Gregory L. Kearns, Pharm.D., Assistant Professor of Pharmaceutics and Pediatrics, University of Arkansas for Medical Sciences, Slot 522, 4301 W. Markham, Little Rock, Arkansas 72205. (501) 661-6281.

The medical records served as the data base for the collection of information relative to the objectives of our study.

To establish that the block randomization technique for selection of medical records for the control group provided a population similar to the study group, the admission records were compared on the basis of patient demographic variables which included: gender, age, weight on admission, age at diagnosis, use of chest physiotherapy, receipt of nutrition consultations, total number of tobramycin doses received, length of intravenous tobramycin therapy and length of hospitalization. The groups were also compared with regard to outcome criteria which included: patient cost of tobramycin serum levels, cost of the CPMS consultation ($35.00; included for the study group only), the total number of serum tobramycin levels performed and the length of hospital stay.

To evaluate the appropriateness of tobramycin serum level determinations performed for both groups, a priori criteria were developed. These criteria were based on accepted guidelines for therapeutic serum level monitoring of aminoglycosides,[8] and are summarized in Table 1.

TABLE 1
CRITERIA FOR DETERMINING THE INAPPROPRIATENESS OF SAMPLE COLLECTION AND UTILIZATION FOR TOBRAMYCIN SERUM CONCENTRATIONS

1) Samples drawn prior to the third dose after initiation of treatment.
2) No dosage change or an increase in dose with a peak concentration $>$ 9.0 mg/L at 0.5 hr. after a dose; $>$ 7.5 mg/L at 1 hour after a dose; or a trough (pre-dose) level $>$ 2.0 mg/L.
3) No dosage change with peak level $<$ 5.0 mg/L or trough level $<$ 0.5 mg/L.
4) Sampling "peak" levels $>$ 1 hour after a dose.
5) Sampling "trough" levels $>$ 0.5 hours prior to a dose.
6) If routine monitoring of serum levels occurred $\leq$ 3 days following a dose change with no suspected clinical or laboratory evidence of tobramycin toxicity.

(Note: all tobramycin levels determined for the purpose of calculating patient specific pharmacokinetic parameters were considered appropriate.)

Statistical Analysis

All results pertaining to grouped data from each study population are expressed as mean and range about the mean (e.g., SEM). Statistically significant differences of a variable between the grouped data were assessed using a two-tailed, Student t test.[9] In all the statistical analyses used in this investigation, the level of significance accepted was $\alpha = 0.05$.

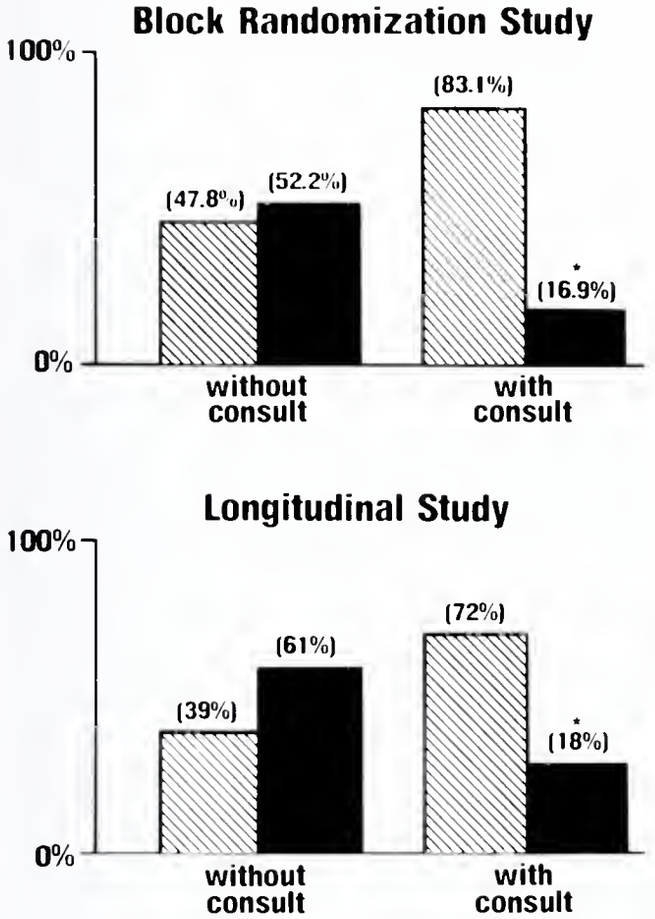
Results

Demographic data and that describing the process of care provided to subjects in both the control and study populations are summarized in Table 2. When each parameter was examined between the populations, no significant differences were found. Data which address outcome parameters for the patient populations are summarized in Table 3. When the study and control groups were compared with respect to outcome parameters, no significant differences were found for the length of hospitalization or the total patient laboratory cost for serum tobramycin level monitoring.

The appropriateness of serum tobramycin level monitoring was determined by review of medication orders, medication administration records and laboratory slips contained in the patient medical record. Information extracted from these documents was then examined in view of the a priori criteria contained in Table 1. This comparison revealed that 83.1% of the serum tobramycin levels performed in the group receiving a pharmacokinetic consultation (study group) were ordered and/or utilized appropriately. In contrast, only 47.8% of the tobramycin levels in the group not receiving a pharmacokinetic consultation (control group) were order/utilized appropriately. This difference was statistically significant ($p < 0.05$).

To verify these data, seven subjects from the study group who had a hospital admission for antibiotic treatment in the six month period prior to the institution of the CPMS were selected for review. For this evaluation, each subject served as their own control and provided an opportunity to evaluate the impact of the clinical pharmacokinetic service in a longitudinal fashion over a relatively short time frame. Examination of these data revealed that 72% of serum tobramycin levels were ordered/utilized appropriately when accompanied by a pharmacokinetic consultation as

compared to 39% when consultations were not performed. In each case (e.g., the block randomization and longitudinal evaluation), the observed differences between the appropriate use of serum tobramycin levels in the subjects receiving and not receiving a clinical pharmacokinetic consult were statistically significant (Figure).



Summary of the impact of clinical pharmacokinetic consultations on the appropriate (solid bar) and inappropriate (cross hatched bar) use of serum Tobramycin levels in patients with CF. Significant differences ($p < 0.05$) are denoted by an asterisk.

DISCUSSION

Clinical pharmacokinetic services have been shown to result in improved use of clinical laboratory services[5] and also, in substantial institutional cost savings when such services were provided to hospitalized adult patients.[6] A study which retrospectively evaluated the impact of the availability of serum theophylline level monitoring on pediatric asthma therapy failed to show improvement in the outcome of therapy.[7] The results of the present study also failed to demonstrate a significant reduction in the length of hospitalization or the cost of using tobramycin serum level monitoring in patients with CF who received a clinical pharmacokinetic consultation (Table 3). While these findings suggest that the provision of pharmacokinetic services did little to influence the outcome of therapy, it is worth noting that the addition of the pharmacokinetic consultation did not escalate the overall cost of providing tobramycin therapy to subjects in the study group. The absence of a significant difference for the length of hospitalization between the subjects in the control and study groups (Table 3) may not have been influenced by the performance of pharmacokinetic consultations. This assertion is supported by the fact that all subjects ($n = 41$) were admitted for treatment according to established protocols which set the length of inpatient treatment to 10-14 days in the majority of cases.

Examination of the mean number of serum tobramycin levels performed between subjects receiving (3.94 per admission) and those not receiving (4.44 per admission) a pharmacokinetic consultation failed to reveal a significant difference (Table 2). At first examination, this result would appear to indicate that the performance of a pharmacokinetic consultation did little to reduce the number of requests for serum tobramycin level determinations in our subjects with CF. In reality, the consultations performed for each patient required that three serum tobramycin level determinations be obtained for the purpose of calculation of patient specific pharmacokinetic parameters and dosing regimen. The remaining serum tobramycin level requests for subjects in the study group were used for routine therapeutic drug level monitoring (e.g., examination of a trough serum concentration every five to seven days throughout the course of therapy). These findings suggest that more tobramycin serum levels were used for "routine" therapeutic drug monitoring in the group of patients not receiving a pharmacokinetic consultation. While not specifically evaluated by our study design, the apparent less frequent use of tobramycin serum levels for routine therapeutic drug monitoring in the study group may have been consequent to better individualization or "targeting" of therapy afforded by the pharmacokinetic consultation. This is supported by our data which demonstrated a more appropriate use of serum tobramycin level determinations in those patients receiving a pharmacokinetic consultation (Figure).

Previous studies have clearly illustrated that requests for therapeutic serum level monitoring of gentamicin,[8,10] digoxin,[11,12] and theophylline;[7,13] and physician requests for therapeutic

TABLE 2
DEMOGRAPHIC DATA FOR PATIENTS WITH CYSTIC FIBROSIS

Demographic Parameters	With Consult (N = 16)	Without Consult (N = 25)
Age (yr)	9.9 ± 1.62	12.0 ± 1.62
Body Weight on admission (kg)	26.4 ± 3.75	29.2 ± 3.2
Age at Diagnosis (yr)	1.5 ± 0.53	1.8 ± 0.56
Gender (%M:%F)	37.5 : 62.5	52 : 48
Chest Physiotherapy (% positive)	87.5	96.0
Nutrition Consult (% positive)	68.8	80.0
% Positive Change in FEV_1*	13.7	11.6
Duration of I.V. Therapy (Days)	13.31 ± 1.03	15.68 ± 0.9
Number of Tobramycin Doses	46.69 ± 4.65	57.9 ± 3.69
Number of Tobramycin Serum Levels per Admission (mean)	3.94	4.44

- All data with exception of those expressed as % are expressed as mean ± SEM.
- * Denotes a positive change in FEV_1 over the course of hospitalization.
- With the exception of gender, there were no significant differences found for a given variable between the groups.

drug monitoring in general;[6,14] are often made inappropriately. Furthermore, these situations have resulted in the inappropriate use of serum drug level data in the overall approach to drug therapy.[8,10-12,14,15]

Based on the criteria used to evaluate the appropriateness of a given serum tobramycin level determination in our subjects (Table 1), our data reveal that tobramycin levels in children with CF were used more appropriately when performed under the guidance of a clinical pharmacokinetic consultation (Figure). The positivity of this finding must be tempered somewhat as the design of our study did not permit us to evaluate the prospective impact of the CPMS on the safety or efficacy of tobramycin therapy in patients with CF. To accomplish this goal, a prospective study would be necessary with more rigid criteria used to evaluate the appropriateness of serum drug level monitoring in view of parameters assessing

TABLE 3
OUTCOME PARAMETERS FOR PATIENTS WITH CYSTIC FIBROSIS WHO RECEIVED TOBRAMYCIN THERAPY

Outcome Parameters	With Consult (n = 16)	Without Consult (n = 25)
Length of stay (days)	14.06 ± 0.97	16.64 ± 1.0
Total Laboratory Cost* ($/day of admission)	20.13 ± 1.27	16.85 ± 2.50

- * Denotes cost of tobramycin levels ($63.10 each) and cost of pharmacokinetic consult ($35.00) for subjects in the study group.
- There were no significant differences found for the receptive outcome parameters between the groups.

drug toxicity and clinical, as well as microbiological progress during therapy.

The inappropriate use of serum drug level monitoring has been shown to result in wasted expenditures incurred as a part of pharmacotherapeutics. Floyd and Taketoma[15] reported a $5,500.00 per year expenditure on digoxin serum level determinations that were performed inappropriately. A recent study by Bussey and Hoffman[14] revealed a misuse of serum drug level monitoring 70% of the time and documented an unjustifiable expense of $3,600.00 over a four week evaluation period.

While the design of our study does not permit us to fully evaluate the economic ramifications of providing clinical pharmacokinetic services to patients with CF, we can use our results to address potential cost savings. As indicated by our data (Figure), 16.9% of serum tobramycin levels performed in patients receiving a pharmacokinetic consultation and 52.2% in patients not receiving a consultation were collected/used inappropriately. Based on these data and the mean number of tobramycin serum level determinations performed for patients in each group (Table 2), projection of 50, 10 to 14 day hospital admissions for tobramycin treatment per year would result in 116 and 33.3 inappropriate serum levels performed for patients receiving and not receiving a pharmacokinetic consultation, respectively. If an institutional patient charge of $50.00 is assumed for each serum tobramycin level determination, the projected yearly costs for inappropriately obtained levels would be $5,800.00 for subjects *not* receiving a pharmacokinetic consultation versus $1,665.65 for subjects receiving a consultation. In terms of inappropriate serum tobramycin

levels alone for this example, a yearly projected patient cost savings of $4,135.25 could be realized as a result of the performance of the pharmacokinetic consultations. If the provision of similar consultations to other pediatric subgroups receiving aminoglycoside therapy (e.g., neonates, patients with suspected or proven gram-negative sepsis, burn patients) resulted in a similar degree of improvement with respect to the utilization of tobramycin serum levels, one could predict that substantial cost savings on inappropriately obtained/utilized serum level determinations could be incurred.

Several factors shown to contribute to the potential misuse of therapeutic drug monitoring include the perceived medical-legal need for documentation that a "therapeutic range" has been attained,[16] and the misunderstanding involved with interpretation/application of such data by practitioners.[17] While the nature of our investigation does not permit us to address many factors which could impact on the requisition/utilization of serum drug level determinations (e.g., training/subspecialty bias, experiential based learning, changing trends in practice, etc.), our data illustrate that clinical pharmacokinetic consultation improved the utilization of tobramycin serum levels in patients with CF. The implications of this result reside not only with the potential reduction of unnecessary expense associated with inappropriate serum level monitoring, but also could impact on the efficacy of drug treatment for patients with CF. This latter assertion remains to be prospectively evaluated.

Our experience with a clinical pharmacokinetic consultation service provided to patients with CF serves to validate the previously reported merits of such services provided to adults.[5,6] For services to be maximally beneficial to any patient population, pharmacokinetic expertise must be integrated with that residing within the clinical laboratory and with medical specialists providing direct patient care. The expansion of analytical capabilities for serum drug level monitoring and future health care trends will require an accountable use of such technologies. This will most assuredly place demands for the provision of clinical pharmacokinetic services not only in teaching institutions, but also in hospitals which routinely utilize therapeutic drug monitoring as a part of patient care.

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Chlorophyllum Molybdites Mushroom Poisoning: A Case Report and Review of the Syndrome

Gary R. Whitaker, M.D., F.A.C.E.P.,* and James F. Box, M.D.**

Sporadic cases of human poisoning by the "green parasol" mushroom, Chlorophyllum molybdites, have been reported in the medical and mycological literature since the late 1800's. Previously known as Lepiota morganii, the mushroom occurs world-wide in temperate and tropical climates. In the U. S. it occurs commonly in the middle-south and southeast during the warm-weather months. It's conspicuous stature and tendency to thrive in fertile, grassy areas bring humans into contact with it very commonly. The occasion of a clinically important case of poisoning in a young Arkansas child and two additional telephone consultations at University Hospital Poison Center regarding suspected ingestion of C. molybdites prompted the authors' interest in reviewing the medical literature regarding human poisoning.

Poisoning by native mushrooms is a subject about which a great deal is yet to be learned. While medical science has come a long way from the traditional and inappropriate panacea of atropine for all mushroom ingestions, yet we have a relatively small body of knowledge about the nature and treatment of poisoning by the 100 or more toxic varieties of approximately 5,000 species growing wild in the U. S.[1] Only in recent years has there been an organized effort to collect data on mushroom poisoning. The North American Mycological Association's Toxicology Committee has spearheaded this effort. Among the phenomena emerging from the study of mushroom toxicity are the confounding facts that the toxicity of a particular mushroom species apparently varies from one specimen to another, from one geographic location to another, and in the same location from one time of year to another. Furthermore, it is not uncommon for a group of people to consume mushrooms from a single batch and have some fall ill, while others are unaffected. This perplexing variability in the expression of poisonous characteristics adds to the unanswered questions about mushroom poisons.

*Assistant Professor of Emergency Medicine, Division of Emergency Medicine, University of Arkansas for Medical Sciences.
**Emergency Medicine Resident, Division of Emergency Medicine, University of Arkansas for Medical Sciences.
Reprint: Gary R. Whitaker, M.D., Division of Emergency Medicine, 4301 West Markham, Slot 584, Little Rock, Arkansas 72205.

Poisoning by native mushrooms tends to occur in four situations; omnivorous toddlers exploring the out-of-doors, ethnic old-timers who mistake North American specimens for edible look-alikes found in their native homelands, adventurous enthusiasts for "natural" food sources whose knowledge of native mushrooms is incomplete, and those who mistakenly identify toxic specimens for psychotropic recreational varieties. The case reported involves the first situation.

A previously healthy 18-month-old male was discovered eating a mushroom growing in his backyard. Approximately 3 hours later, he began vomiting profusely and became pale and lethargic. Within minutes of falling ill he became limp and poorly responsive, with shallow respirations. He was taken immediately to a local hospital emergency facility. There he was described as a pale, lethargic child responding minimally to verbal commands. His pupils were noted to be "pinpoint". Vital signs were temperature 99.5 (R), pulse 150/min., respirations 32, and BP 84/58.

On arrival at the final treating facility approximately 6 hours post ingestion, the patient was still "limp". Within an hour his colour was improving and his pupils were normal. The child had no more vomiting but developed profuse brownish watery diarrhea. Muscle tone and deep tendon reflexes returned to normal over the next 12 hours. There were no other abnormal physical findings.

On admission the laboratory studies obtained revealed a WBC 14,600, Hbg 14.3, HCT 45.8, and platelet count of 98,000. Electrolytes, BUN, and creatinine were normal. SGOT, SGPT, and LDH were marginally elevated at 50 IU/L, 29 IU/L and 258 IU/L respectively, but returned to normal by the following day.

Treatment consisted of 15 gm. activated charcoal, 50 cc magnesium citrate, and parenteral hydration. By the following day the child's exam and behavior were normal.

Samples of the ingested mushroom were identified by a representative of the Arkansas Mycological Society as Chlorophyllum molybdites.

Chlorophyllum molybdites is a large attractive mushroom that favors grassy areas and fruits from

spring to fall in the middle south. (See Figure 1) It frequently appears after a rain shower, singly or in small groups. It may be found in "fairy-ring" formations on lawns and in parks. The mushroom stand 10-25 cm tall with a convex-knobbed to nearly flat cap that is typically 7-30 cm broad. The flesh is white to ivory and dry. The cap surface is covered with discrete scales of buff to cinnamon colour occurring in concentric rings.[2] The central knob or umbo may be completely covered with scale. Brownish staining occurs on the stalk. The gills are close, broad, and do not attach to the stem. Their colour is a unique dull gray-green in mature specimens, a feature that separates this fungus from the edible Lepiota procera with which it is most often confused. Both have whitish gills when immature, but L.procera (true parasol mushroom) retains an ivory white colouration of its gills.

If the cap of C. molybdites is removed from the stem and placed gill-side down on a piece of white paper, then covered with a bowl to retard drying, a fine green coating of spores will appear after an hour. This green spore print is diagnostic of C. molybdites.

The stalk is encircled by a prominent frilly ring (annulus) that in age may break free and slip down the stalk. The fungus does not possess a cup (volva) at the base.

The toxin of C. molybdites has been studied by Eilers and Nelson[3] and its effects on small animals measured. They determined that the toxin is a



Figure 1.
Chlorophyllum molybdites.

proteinaceous substance with an approximate molecular weight in excess of 40,000 daltons. Pepsin and HcL partially degrade the toxin in vitro and probably ameliovate its effect in the gastrointestinal tract. It is also heat labile, losing all detectable activity in 30 minutes at 70 degrees centigrade. While the principal clinical effects are those of toxic gastroenteritis, neurologic effects and cardiovascular collapse may be prominent in children. In the only reported death, the poisoning terminated in status epicepticus.[4,5]

Typically the onset of symptoms occurs 30-150 minutes after ingestion with nausea, vomiting, cramps, bloating, pallor, diaphoresis, and diarrhea. The diarrhea may become bloody. Dizziness, faintness, weakness, and paresthesias are reported. Dilation of the pupils is occasionally reported.[6,7] The case described above was peculiar in that the child was described as having "pin-point" pupils when first examined. Both agitation and central nervous system depression are reported to occur. Coma and convulsions occur usually as late events.[4] One case of disseminated intravascular coagulation associated with gastrointestinal hemorrhage has been reported.[8] Transient urinary protein and granular casts occasionally occur. Most cases of C. molybdites poisoning will resolve in 48 hours with supportive care. No long-term sequelae have been reported.

Lampe[4] discusses therapy of C. molybdites poisoning along with other mushrooms causing toxic gastroenteritis and recommends supportive care with strict attention to fluid and electrolytes. Spontaneous enteric emptying usually obviates the need for induced emesis or catharsis. Activated charcoal slurry has a theoretical but unproven role in absorbing toxin from the gut lumen. Doses of 1.0 gm/kg can be used in children. The adult dose is usually 60-100 gm.

Pertinent initial laboratory studies should include CBC, BUN, electrolytes, urine analysis, prothrombin time, partial thromboplastin time, fibrinogen, and blood sugar. The occurrence of transient liver enzyme elevation in the case described might indicate a need for monitoring these chemistries as well.

Early identification of the supposed specimen should be a first priority goal in any suspected wild mushroom poisoning. Specimens resembling ingested species should be dug up (not plucked) and brought in for identification. When ingested species cannot be determined as in cases where children ingest yard mushrooms, all specimens in the vicinity should be dug up and taken to the emergency facility. Consultation with a mushroom taxonomist or specialist in mushroom poisoning can usually be arranged by calling the regional poison center or a university medical facility. Some community colleges will have staff botanists familiar with higher order fungi as well.

If enteric emptying does not occur spontaneously, syrup of ipecac should be employed to achieve emesis. Specimens of emesis can be analyzed after the method of Eilers and Barnard[9] to detect spores traceable to ingested species. Activated charcoal and a saline cathartic are indicated in many mushroom intoxications. Specific antidotes are applicable in a very limited number of situations making identification of the offending species of paramount importance.

C. molybdites is far from the worst poison mushroom native to the middle south but is certainly one of the more prevalent. Seven of the eight broad categories of poisonous mushrooms have been identified in Arkansas, including members of the lethal cyclopeptide toxin group. Accurate identification and appropriate treatment will result in a favorable outcome in the majority of cases.

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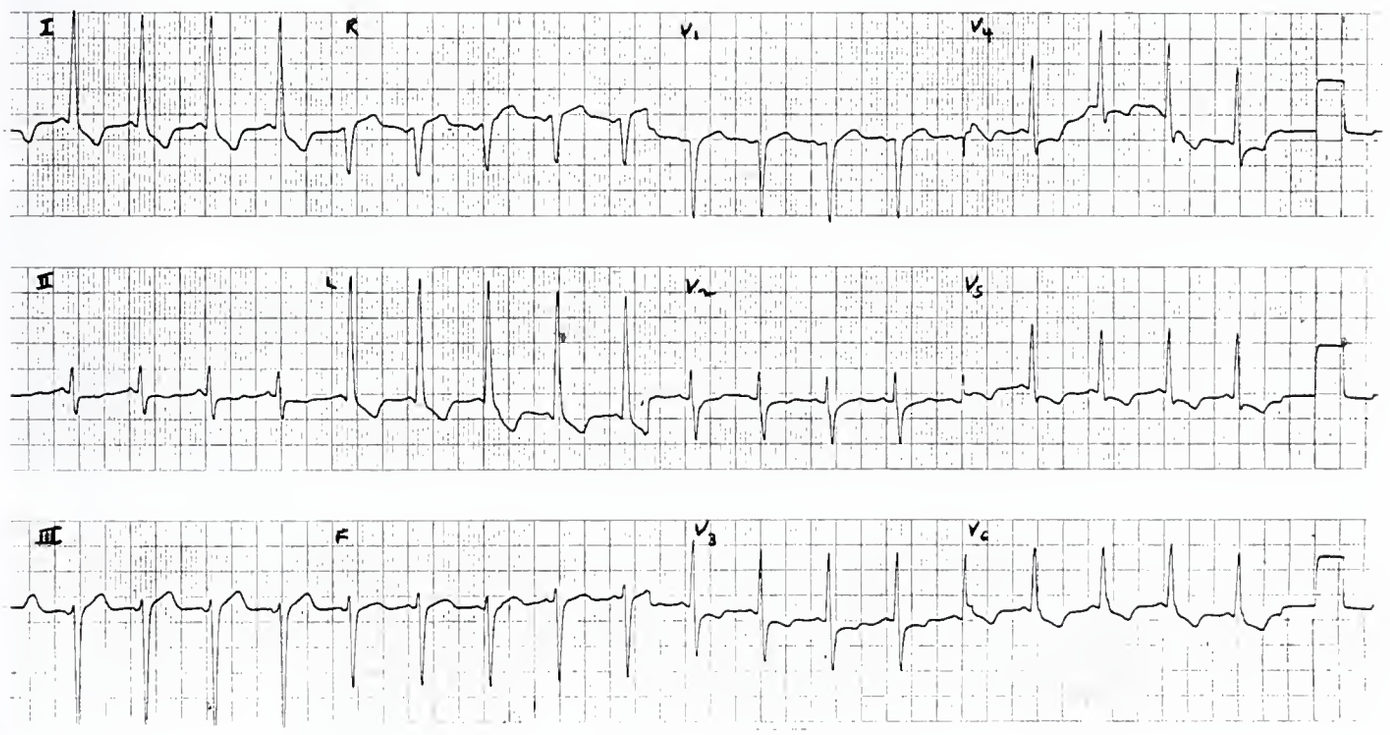
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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 229)

HISTORY: M. S. is a 50-year-old woman who has presented to the hospital because of shortness of breath. She has had no chest pain and does not smoke. Her past medical history is positive for hypertension. On physical examination, she is hypertensive and has crackles in both lung bases. S_1 is soft, an S_3 is present, and no murmurs can be appreciated. What do you think of her ECG?



John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

Strength Training by Resistive Exercises

Richard A. Nix, M.D.*

Enthusiasm for personal fitness has increased phenomenally over the past decade. The "fitness boom" gained momentum in the early 1970's with the popularization of distance running. Recreational athletes began using this sport for cardiovascular conditioning, muscular strengthening, stress management and weight control. A gradual metamorphosis in training techniques has been noted over the last few years—the "tunnel-vision runner" is becoming a thing of the past. Multisport training is being widely accepted by recreational athletes and offers many advantages. These include: more diversity for enjoyment purposes, better overall muscular conditioning and improved injury prevention.

Professional and recreational athletes alike are increasingly using specific strength training in addition to sport-specific training to improve their athletic performance. Objective data regarding the effect of various strength training techniques on sports performance is scarce and highly subject to interpretation. Sport-specific training will always be the *sine qua non* of improved performance in that given sport. Strength training resistive exercise is most commonly used as an adjunct for improving results in the performance sports (running, swimming, biking, etc.). Weight lifting itself is not yet widely popular as a competitive sport relative to the aerobic sports.

There are four types of resistive exercises: isometric, isotonic, variable resistance and isokinetic exercises. A brief review of muscle physiology coupled with a discussion of the four types of resistive exercises (their features, advantages and disadvantages) will follow.

Muscle Physiology

Understanding muscle structure and function helps greatly in assessing the effectiveness of various types of resistance exercises. Grossly, each

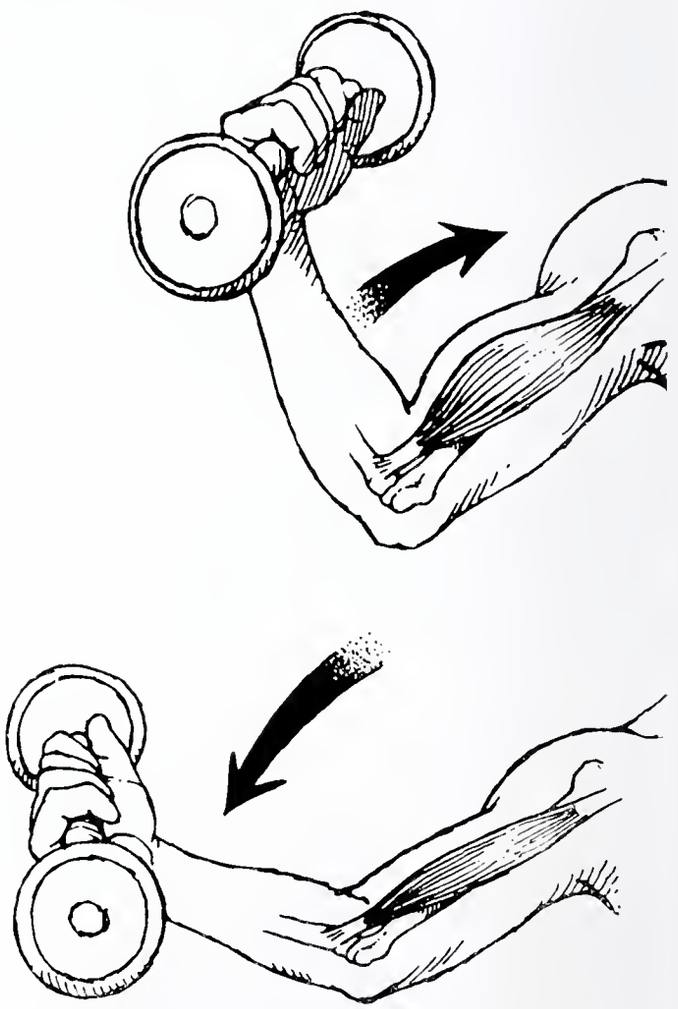


Figure 1.
Concentric (shortening) and eccentric (lengthening) contractions of muscle against resistance are demonstrated (reprinted from Turek).[6]

*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

skeletal muscle is ensheathed in a connective tissue called the epimysium. Subdivisions of this within the muscle belly are termed perimysium and endomysium. Individual muscle fibers are about one millimeter in diameter. These fibers are composed of the basic contractile unit of skeletal muscle, the myofibril. These myofibrils are approximately 1.0 micron in width and about 2.5 micra in length. These are composed of alternating filaments of the proteins actin and myosin. Electrical stimulation through a peripheral motor nerve initiates chemical changes in the skeletal muscle (probably through calcium ion liberation) resulting in increasing overlap of the actin and myosin filaments. The net effect is shortening of the muscle. The contractile force generated by the actin/myosin filament overlap is very effective in its mid-range and less effective in extremes of stretch or contraction. Clinically this is seen where muscles generate very forceful contraction in their mid-range, but are much less effective in extremes of stretch or contraction.

Of greatest interest lately is the determination of two different functional types of muscle fibers. Generally these are divided into slow twitch fibers and fast twitch fibers. The latter are further subdivided based on their rate of metabolism and fatigueability. Generally the slow twitch fibers offer slower velocity of contraction with less fatigueability. These are characteristic of muscular demands in the endurance sports such as distance running. Fast twitch fibers generate a higher velocity of contraction but are fatigued much more readily. This type of fiber function is suited quite well for the sprint and jumping sports. The ratio of fiber types appears to be genetically determined and is not significantly altered by athletic training. Proportions of fiber types vary from athlete to athlete and even from muscle group to muscle group.

Muscles effect motion of joints in two ways (see Figure 1). In *concentric* contraction, the muscle shortens against resistance. An example of this is the biceps brachii muscle as it causes elbow flexion. *Eccentric* contraction involves lengthening of the muscle belly against resistance. An example of this is the tibialis anterior muscle of a runner which, at the point of heel strike begins an eccentric or lengthening contraction until the foot lies flat on the ground in stance phase. Because many sports require eccentric contraction of muscle groups, it is felt that resistive exercise routines which offer eccentric contraction muscle training are advantageous.

Isometric Exercises

Isometric translates loosely as "same length". This implies a forceful contraction of the muscle without length change (shortening *or* lengthening). This implies no change in the position of joints involved; that is, no concentric or eccentric contracture — only tension development. Traditionally, isometrics are done with muscular contraction against a fixed point. Most will remember this as a regimen advertised for many years in Superman comic books by body builder Charles Atlas. This modality offers distinct advantages in that it is quite convenient and inexpensive to form a work-out regimen. Also, as there is no joint motion involved, one can easily protect painful areas of motion while exercising. Eccentric muscle contraction is impossible with isometric exercise. Little muscular endurance is developed with this fixed-point exercise. Some data suggest that increased injury rates may be associated with isometric training in collegiate sports. Too, this exercise regimen can be extremely boring without motion or weights to generate a sense of accomplishment.

Isometric exercise will always be useful in immobilized limbs such as with quadriceps setting exercises in a postoperative cylinder cast.

Isotonic Exercises

Free weights are the most common equipment used for isotonic resistive exercises. Calisthenics are another form of isotonic resistive exercise which uses body weight as a form of free weight. Resistance to muscle movement is constant and is a function of gravity. This straight-line resistance by gravity does not accommodate very well the rotary movements of joints in the body such as the knee or elbow (see Figure 2). In this figure the gravity vector on the weight is unchanging, but the force vector due to the rotary movement of the elbow is everchanging. Biceps muscle work is maximized in the mid-range of the free weight arm curl, but is minimum at the extremes of motion. It is advantageous, however, that both concentric and eccentric muscle contraction are possible with this type of exercise. Distinct advantages of free weight isotonic exercises are their low expense and easy availability. Disadvantages include the element of danger with free weights, and spotters are often required. It is very important that the speed of exercise remains slow.

Acceleration decreases the muscle loading at the end of a given arc of motion exercise. Most authorities recommend an isotonic exercise workout every other day for maximum strength gains with adequate rest.

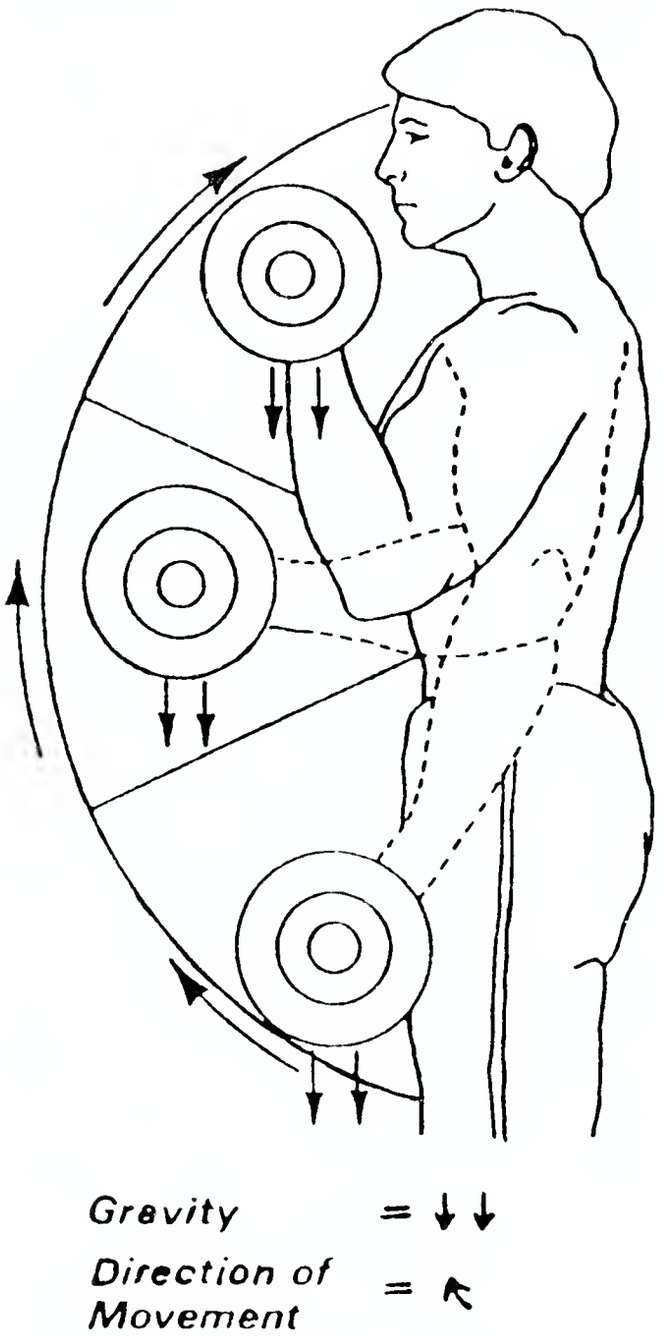


Figure 2.

With free weights the gravity vector is unchanging but the force vector resisting rotary movement of the elbow is everchanging (reprint).[1]

Variable Resistance Exercise

More than any other method, variable resistance exercise has popularized weight training to recreational athletes. The most popular form of this exercise is performed with Nautilus equipment. This form of exercise can also be simulated by manual resistive exercise in which a trainer resists motion of a given joint in an athlete manually at every point in the arc of joint motion.

A comparison of isotonic techniques (free weights) with variable resistive techniques (Nautilus) will better explain the principles of variable resistance. Free weights function by gravity and offer a straight-line resistance against a muscle. For instance, in free weight biceps curl against maximum resistance, the muscle does very little work in maximal extension or flexion of the elbow. Work is maximized in the mid-range of motion, but little strength gain is noted in extremes of motion. In variable resistance equipment such as Nautilus, the straight-line pull of the weight plates is transmitted to a rotatory resistance by a chain linkage to a cam (see Figure 3). The variable diameter of the cam offers variable resistance transmitted to muscle being exercised. This affords variable resistance to the muscle throughout its arc of motion, specifically, maximum resistance through the muscles efficient mid-range arc of contraction and lower resistance through its less efficient arc (usually terminal flexion and terminal extension).

Speed control is an important factor in resistive exercises. Acceleration of motion is possible both with Nautilus (variable resistance) — and free weight exercises. This reduces the work on a muscle unit near the end of its arc of motion. This will be discussed further under isokinetic resistive exercise.

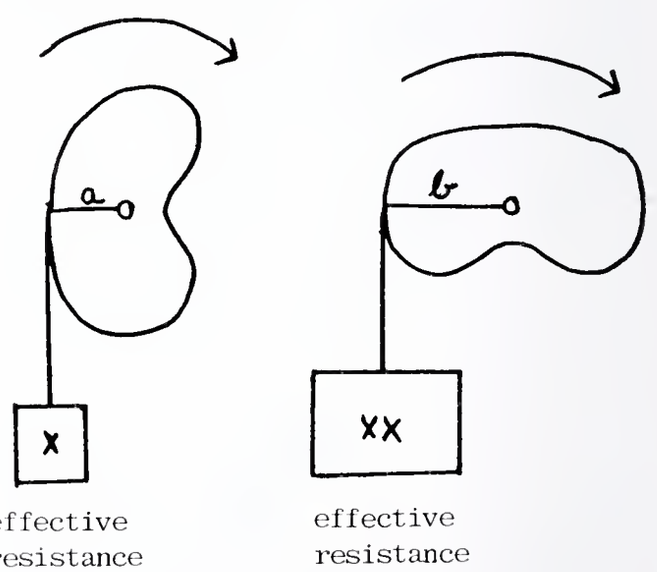


Figure 3.

The cam effect of variable resistance (Nautilus) equipment alters the effective resistance against rotary motion throughout the arc of joint motion.

Nautilus machines are designed to effect a full range of joint motion. Additionally, many are designed to reproduce specific sport motions. Eccentric muscle exercises are also possible. Also, worthy of note with Nautilus equipment is the

convenience and safety of the plate and pin system to increase or decrease weight resistance. This plate system also provides an objective measure of strength gains.

In recent years the availability of Nautilus equipment has improved greatly. Most neighborhood fitness centers have an adequate line of Nautilus variable resistance equipment.

Isokinetic Exercises

Isokinetic exercise offers resistance which accommodates to the force applied. This is quite comparable to the resistance applied by a hydraulic door closer. The harder the force is applied, the greater the resistance is generated. Exercise machines of the isokinetic resistance type are generally constructed with hydraulic or pneumatic valve resistance. A distinct advantage of isokinetic exercise is speed control. Unlike isotonic (free weights) or variable resistance (Nautilus) exercises, acceleration is minimal resulting on good muscle work throughout a full range of motion. Common commercial machines developed with isokinetic resistance mechanisms include Cybex II, Orthotron, Hydra Gym, and Keiser equipment. A simpler means of generating isokinetic resistance involves underwater exercise. This offers a similar hydraulic resistance which accommodates to the force applied.

Unfortunately, eccentric muscle contraction is impossible with isokinetic exercise equipment. Alternating concentric contraction of opposing muscle groups with a back and forth motion occurs however. An example of this is the alternating action of the quadriceps and hamstring muscle groups in knee extension/flexion exercises. An advantage of this is the reflex momentary relaxation of the muscle group which allows capillary refill in that muscle. Interestingly, isokinetic training in a select group of distance runners by running in a swimming pool has been shown to improve their actual marathon times in spite of avoidance of sport-specific training (actual road running).

Anabolic Steroids

The recent abuse of steroids in olympic strength athletes has brought this problem to the forefront. Used by some body builders and strength athletes, anabolic steroids are a synthetic form of testosterone designed to increase its masculinizing effects. Common brand names are Dianabol, Winstrol, Anavar and Nilevar. There is much debate as to the effectiveness of these drugs in increasing muscle mass. Even if effective in this process, the drugs do not appear to improve muscle strength or endurance. They are produced commercially for documented medical problems such as hormonal imbalances, not for strength athletes. Side effects are numerous and include testicular atrophy, decreased sperm count, jaundice and even hepatocelluar carcinoma. Their use has been outlawed by the International Olympic Committee. There are no indications for their use in professional or recreational athletes.

Strength training by resistive exercises has become an addition to the exercise regimens of many recreational activities. The previously described four techniques of resistive exercises each have distinct advantages and disadvantages. Of prime importance in any strength building program is consistency. Workouts three times per week are recommended to allow adequate muscle recovery regardless of the type of resistance employed. It is felt by many that eccentric or lengthening contraction of a muscle is more important to increase strength and size of that muscle than is concentric contraction. This feature is present in both isotonic and variable resistance exercises. Although incapable of eccentric muscle contraction exercise, isokinetic machines have other distinct advantages as described above. It should be re-emphasized that anabolic steroids have no place in sports.

This review of strength training modalities will hopefully aid in directing your patients in a diverse program of preventive medicine through general conditioning.

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PUBLIC HEALTH AT A GLANCE

Quality Assurance in Ambulatory Care

Mary Jo Knittig, MBA*

Currently, health care organizations spend far less money, time and effort on quality assurance activities than do industrial organizations. But as costs and consumerism have grown in the health care industry, so have quality assurance programs. Quality assurance efforts began in hospital care for several reasons. Hospital care accounts for most of the cost of health care and hospital care lends itself to peer review whereas solo practice does not. More is also known about care provided in hospitals than in ambulatory settings.

This led to the creation of Professional Standards Review Organizations and the incorporation of quality assurance activities into the standards of the Joint Commission on the Accreditation of Hospitals (JCAH). But the time is right for quality assurance programs in ambulatory care. Patients will be receiving more and more care in ambulatory settings. And physicians will be held more accountable than ever. This article will review various quality assurance techniques that might be used in ambulatory care.

Quality assurance is an evaluation of care with the goal to improve people's health. The focus of the evaluation may be on structure, process or outcome. *Structure* refers to the institutional or system aspects of care. Staff qualifications, physical facilities, policies etc. are examples of structural aspects of care. *Process* refers to the steps in care and *outcome* is the end result of care such as change in patient health statue and patient satisfaction. A focus on process is usually less expensive to conduct and outcome is measured if the steps in care are proven by research to be effective in improving patient outcome. But ambulatory care is often regarded as the area of medicine whose practice is least well-grounded in scientific research. The time frame in a quality assurance program may be prospective, concurrent or retrospective. Care cannot be evaluated in advance but a topic can be selected and studied from that point in time. This is *prospective* review. *Concurrent* review takes place while care is being given and has the advantage that intervention can take place if deficiencies are found. *Retrospective* review is done after the care is given.

A quality assurance evaluation may attempt to document overall quality or focus on problem-solving. A problem-focused approach has been promoted in many quality assurance programs. Auditing good care while overlooking problems will not improve the patient's health. The problem-focused approach looks for areas where there is an "achievable benefit not achieved (ABNA)".

Many techniques may be used to select the topic or possible problem to be studied. *A quick review of records* might suggest the need for evaluation. *Structured group decision-making techniques* such as the Delbecq method may be used. A *literature review of updated medical practice* could be used to eliminate outdated practice. *Complaints* can be used to suggest topics. *Staff surveys* can be used in the same manner.

After the problem is selected, a method of studying or assessing the problem is chosen. Care should be used in selecting the method. An old joke mocks the drunkard who looks for his coin not where he lost it but under the street light where he can see better. The best evaluation may not be where the data is easiest to obtain.

There are many methods of studying the problem. *Record review* is a common method. *Observer recordings* can sensitize staff members as they view care from the eyes of the patient.

*Bureau of Health Resources, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.

Telephone interviews provide patient feedback at a minimal cost and promote the concern of the organization for its patients. *Exit interviews* can be used to look at patient education and satisfaction. *Patient questionnaires* are less costly than personal or telephone interviews but there may be literacy limitations, hesitancy to be frank and a tendency for the patient to forget to mail the form back. *Patient quizzes* can help evaluate patient knowledge. *Computer-assisted studies* can do such things as compare standards against information in the patient chart.

The study or assessment of the problem is only the first step in quality assurance. The second step is finding a solution to the problem and correcting it. A second study may then be necessary to make sure the corrective action was effective.

Quality Assurance activities are taking place in many ambulatory facilities today. For example, a quality assurance program was conducted in 11 private dentists offices in North Carolina. Outside dentists reviewed dental charts and records and evaluated restorative procedures through 225 post treatment clinical exams. Patient attitudes and satisfaction were measured twice using questionnaires—once in the dental office waiting room and immediately after the clinical exam by the dentist reviewer.

Of the 225 examined 4% were told that some of their dental treatment needed to be redone. Postexam patients seemed more satisfied than pretest patients in all areas of satisfaction assessed. The dental review by an outside dentist increased the patients' trust and confidence in their dentist.

There is no one way to conduct a quality assurance evaluation. Each facility must choose the methods best suited to the problem it experiences and the resources it has to carry out to study and correct those problems. Physicians in primary care spend, on the average, about 12 minutes with each patient. If quality assurance activities increased the time spent by 3-5 minutes, this could raise by one third or more the price of an office visit. So the organization must give careful thought to their evaluation plan and how it will improve people's health.

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ANSWER—Electrocardiogram of the Month

DISCUSSION: The rate is 120 beats per minute and the mechonism mast probable is sinus. However, the PR interval is less thon 0.12 secands which could imply the presence of junctionol rhythm or a preexcitotion syndrome. Left ventriculor hypertraphy is suggested by the presence af left oxis deviotion, high limb leod voltage, ond ST-T chonges. Her histary and physical exominatian suggest the passibility af cangestive heort foilure. Alang thot line, o chest film would be helpful. With the scont infarmotian pravided, hypertensive diseose stands as one etialagy far her passible heort failure and the ECG hints ot least of ane end argan effect commanly assocloted with systemic hypertensian.

Esophageal Perforation: Roentgenographic Diagnosis

Timothy C. McCowan, M.D., Nancy L. Hillis, B.A., and Wilma C. Diner, M.D.*

ABSTRACT

Esophageal perforation can be devastating event with a high morbidity and mortality. Outcome is directly related to the promptness of diagnosis and the delay in definitive treatment. The diagnosis is clinically difficult since many of the signs and symptoms are subtle and nonspecific. Plain film and contrast roentgenography are the most valuable methods of diagnosing and delineating esophageal perforation.

INTRODUCTION

The detection and treatment of esophageal perforation continue to be major medical challenges. The incidence of esophageal perforation appears to be rising and may be related to increasing instrumentation of the gastrointestinal tract, higher rates of blunt and penetrating trauma, and longer survival with associated neck, thoracic, and abdominal diseases.[1,2,3,4] The cervical esophagus at the region of narrowing of the cricopharyngeus muscle was once the most common location for endoscopic esophageal perforation. However, increasing use of endoscopy and simultaneous dilatation of strictures has spread the areas of perforation almost evenly throughout the cervical and thoracic esophagus.[3,4]

Patient mortality is directly related to the time between perforation and definitive treatment. Mortality rates approach 50 percent in some series despite therapy. Untreated cases are almost 100 percent fatal. Perforation of the thoracic segment carries the highest mortality and morbidity followed by the abdominal and cervical regions.[4,5] The clinical signs and symptoms of esophageal perforation are nonspecific and include neck, chest, back, and abdominal pain; dyspnea; dysphagia; fever; crepitus; leukocytosis; and shock.[2,6]

Case Reports:

Case 1

A 25-year-old male presented to the emergency department with a gunshot wound to the lower anterior neck. Vital signs were stable and the patient had no cardiopulmonary distress. Decreased neurologic function was noted in the left leg. Plain films of the neck and thoracic spine showed soft tissue swelling and the bullet in the

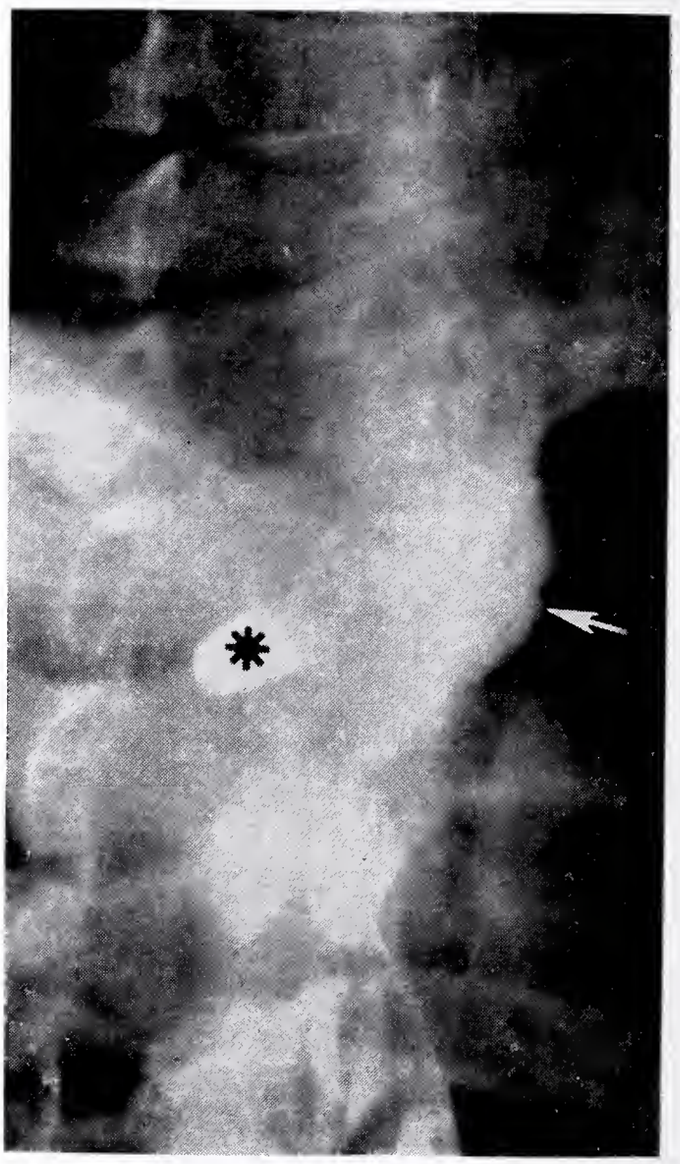


Figure 1.

Case 1. The bullet (asterisk) and extravasated contrast (arrow) are seen.

*Department of Radiology, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas.

T2-T3 disc space with extension into the spinal canal. No infiltrate, pneumothorax, pneumomediastinum, or pleural fluid was noted on an upright chest x-ray. Arch aortogram revealed no arterial injury. Gastrografin swallow showed extravasation of contrast into the soft tissues of the lower left neck (See Figure 1). He was taken to surgery for repair.

Case 2

A 58-year-old male developed acute, severe left chest pain and shortness of breath after vomiting approximately 1 hour after eating supper. Vital signs were stable on presentation. Chest x-ray showed a left pneumothorax and large left pleural effusion (See Figure 2). Gastrografin swallow demonstrated a left posterolateral perforation of the distal esophagus with extravasation of contrast into the mediastinum (See Figure 3). He was taken to surgery for repair and drainage.

Etiology (Table I)

Iatrogenic injury is the most common cause of perforation of the esophagus. This occurs predominantly from upper gastrointestinal endoscopy, stricture dilatation, and surgery. The use of rigid endoscopes and the presence of associated diseases increase the chance of perforation.[2,3,4] Esophageal perforation has also occurred after nasogastric intubation, endotracheal intubation, and emergency placement of esophageal obturator airways.[7,8,9,10] The use of the Sengstaken-Blakemore tube in the treatment of bleeding esophageal varices has led to a number of reported cases of perforation.[11,12] Mediastinal surgery, mediasinoscopy, and the placement of mediastinal drains have been associated with esophageal perforation.[1] Perforation of the intraabdominal portion of the esophagus is usually related to paraesophageal surgery.[2]

Foreign body ingestion is a known cause of esophageal perforation. A variety of objects including bones, false teeth, can and bottle tops, swords, wire clothes hangers, and coins have been cited as etiologic agents.[14,15] Penetrating and blunt trauma to the neck, thorax, and abdomen have produced esophageal perforation.[3,16,17] Although spontaneous rupture of the esophagus (Boerhaave's syndrome) is a well-publicized cause of esophageal perforation, when underlying conditions such as carcinoma and acid-peptic disease are excluded, this entity comprises a small portion of all esophageal perforations.[1,2,3,4] Other uncommon causes of esophageal perforation include



Figure 2.
Case 2. A pneumothorax (arrow) and left pleural effusion are noted.



Figure 3.
Case 2. The extravasation of contrast from the distal esophageal perforation is well demonstrated (arrow).

radiation, carcinoma, caustic injury, acid-peptic disease, and Bechet's disease.[18]

TABLE I
ETIOLOGY OF ESOPHAGEAL PERFORATION*

- Iatrogenic
 - Endoscopy
 - Dilatation
 - Surgery
 - Mediastinoscopy
 - Intubation
 - Mediastinal drains
 - Sengstaken-Blakemore tube
- Foreign body
- Spontaneous (Boerhaave's Syndrome)
- Trauma
 - Penetrating
 - Blunt
- Caustic ingestion
- Carcinoma
- Acid-peptic disease
- Radiation
- Behcet's disease

*Modified from O'Connell

Noncontrast Studies. (Table II) Plain roentgenograms of the neck, thorax, and abdomen should be the initial diagnostic studies and are suggestive of the diagnosis in up to 90 percent of cases.[1,6]

TABLE II
PLAIN FILM FINDINGS IN ESOPHAGEAL PERFORATION

- Neck
 - Widening of prevertebral soft tissues
 - Air in precervical tissue planes
 - Localized air-fluid level
 - Straightening of cervical spine
 - Anterior displacement of esophagus
- Thorax
 - Subcutaneous emphysema
 - Widening of mediastinum
 - Pneumomediastinum
 - Pneumothorax
 - Hydropneumothorax
 - Pleural effusion
 - Mediastinal fluid collection (with or without air-fluid level)
- Abdomen
 - Intraperitoneal air or fluid
 - Retroperitoneal air or fluid
 - Lesser sac pneumoperitoneum

In suspected perforation of the cervical portion of the esophagus, anteroposterior and lateral films of the neck should be obtained in hyperextension (after cervical spine injury is excluded) so that the clavicular shadows do not obscure the esophageal inlet. Findings suggestive of perforation include widening of the prevertebral and retropharyngeal soft tissues, air in the precervical tissue planes, localized air-fluid level, straightening of the cervical spine, and anterior displacement of the esophagus.[6,18]

In the thorax, esophageal perforation may present as subcutaneous emphysema, widening of the mediastinum (best seen in the paratracheal region), pneumomediastinum, pneumothorax, hydropneumothorax, pleural effusion (bilateral or unilateral on either side), or mediastinal fluid collection (with or without an air-fluid level). This study should be performed upright if possible, and overpenetrated or Bucky roentgenograms may be of value.[1,6,18]

Plain film studies of abdominal esophageal perforation may show any of the thoracic manifestations noted above if the perforation also involves or extends into the thoracic esophagus. Specific abdominal findings include free air or fluid collections in the peritoneum, lesser sac, or retroperitoneum.[25,26]

Contrast Studies. There is controversy regarding the appropriate contrast medium for the diagnosis of esophageal perforation. Barium sulfate has been considered the contrast medium of choice for the gastrointestinal tract due to its low cost, inert nature, isoosmolarity, and high radiographic density. However, the presence of barium sulfate in the mediastinum has been shown to cause granuloma formation and fibrosing mediastinitis whether alone or mixed with bacterial contamination.[19,20] This has not been documented as clinically significant in human studies.[21,22] As in peritoneal contamination studies, water-soluble iodinated contrast medium causes little inflammatory or histological change in the mediastinum. The primary risks are pulmonary injury following aspiration and fluid derangements secondary to high osmolality.[19,20,22] However, 25 to 50 percent of esophageal perforations are not visualized or are inadequately visualized with water-soluble contrast.[1,6,23] Current opinion favors preliminary use of a water-soluble contrast agent followed by barium sulfate if the suspected perforation is not seen or is

inadequately delineated.[22] The use of isotonic water-soluble contrast agents may offer significant safety advantages, but their efficacy in diagnosis remains to be established.[24]

Contrast studies rely on the visualization of contrast media outside the lumen of the esophagus. Good distention of the esophagus is critical. Cineradiography or video taping may be necessary in uncooperative patients. In the cervical region, anteroposterior and lateral films should be obtained. The thoracic esophagus is best evaluated with upright anteroposterior, lateral, and oblique views. Prone oblique views should be performed if clinically possible. Crosstable lateral decubitus views may be indicated in some patients.[18] Contrast may be seen in the abdomen or retroperitoneum with perforation of the abdominal portion of the esophagus.[25]

Other Studies. Radionuclide studies and computed tomography have a limited role in the primary diagnosis of esophageal perforation, although they may both be of help in some circumstances.[27,28] Computed tomography is valuable in the evaluation of the post-operative esophagus and may be useful in the follow-up of complications of esophageal perforation.[29]

Treatment

Resuscitation where needed followed by prompt and definitive surgical therapy has been the mainstay of treatment. The particular surgical procedure is influenced by the time between perforation and treatment, underlying diseases, condition of the patient, and the location and extent of the perforation. Some perforations are being managed non-operatively. The reader is referred to other sources for a discussion of treatment.[1,2,6,30]

SUMMARY

Esophageal perforation continues to be an extremely lethal event. Even non-fatal outcomes are frequently associated with a high morbidity. Prompt diagnosis and treatment are necessary to assure the best outcome. Since symptoms and signs may be subtle or nonspecific, it is important to maintain a high degree of clinical suspicion. Esophageal perforation should especially be considered in any patient following instrumental manipulation of the esophagus or upper airway; foreign body ingestion; blunt or penetrating trauma of the neck, chest, or abdomen; surgery of the neck, chest, or upper abdomen; or following prolonged or severe vomiting. The recognition of plain film roentgenographic signs of perforation and the appropriate use of contrast studies are the mainstays of early diagnosis.

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EDITORIAL

High Blood Pressure and Kidney Disease

Alfred Kahn, Jr., M.D.

Two areas of research which have been of considerable interest to investigators in recent years have been high blood pressure and kidney disease. Both are rather silent killers. Often the diseases are inter-related—but not invariably so. The importance of these diseases is that they are among the top causes of morbidity and mortality in our society. There is an excellent review of kidney and hypertension by T. F. Ferris in *Archives of Internal Medicine* (Vol. 142, pg. 1889, October, 1982)—from the Department of Medicine at the University of Minnesota. Ferris oriented his article to three facts which he believes are important in relating the kidney to arterial disease; "I. Release of renin into the circulation with resultant increase in plasma angiotensin. II. Maintenance of sodium balance, a critical determinant of extracellular volume and vascular sensitivity to angiotensin II, and III. Synthesis of vasodilating prostaglandins that may effect sodium excretion and vascular sensitivity to angiotensin II and norepinephrine."

Ferris credits Goldblatt with important modern investigation in renin as a cause of hypertension. Goldblatt showed that a decrease in renin perfusion pressure causes high blood pressure in dogs. Later it was found that if renin perfusion was reduced, excessive renin could be found in the renal vein. Subsequently, renin was shown to be an intermediary substance in hypertension—in that blood pressure elevating substance was not renin but renin acted on a substance in serum which formed angiotensin and angiotensin in turn elevated the blood pressure. Still later, angiotensin was found to be subjected to a division of angiotensin I and angiotensin II by an enzyme. Angiotensin was also found to alter sodium balance by stimulating aldosterone secretion. Ferris reports that renin is not a single substance but may exist in various forms and made in other organs besides the kidney. It has been found that renin can be released from the kidney by different types of renal stimulation as "transmural pressure across the afferent artery, absorption or delivery of sodium chloride to the macula densa, activity of renal sympathetic nerves, the circulation of angiotensin II, plasma sodium, potassium concentration and renal prostaglandin synthesis".

Ferris says that the most important factor in renin release seems to be the afferent artery acting as a baroreceptor; apparently either a decrease in perfusion or decreased compliance of the arteriole can cause a release of renin. It is of importance that in experimental animals if a clip is put on one kidney the blood pressure will go up; it will stay up if the other kidney is left intact. If the other kidney is removed, it will eventually return to normal. Ferris states that the cause of this is not entirely clear despite a lot of experimental work which has been done on hormones and denervation. An important fact in the so-called Goldblatt type kidney is that there is a decrease in renin outpouring in the affected kidney. The author also reports the studies which show that exchangeable sodium increases the so-called Goldblatt high blood pressure when the unaffected kidney is taken out; he further goes on to say there is sodium loss in the unaffected kidney if it is left in—and is presumed to have an elevating blood pressure affect. It is reported in this article that the patients who have renal artery stenosis as a cause of hypertension are so-to-speak dependent on circulating angiotensin I and II. Ferris states that angiotensin II antagonist can reverse high blood pressure. He further states that sodium balance in these patients have to be considered as the state of sodium balance apparently influences the reaction of the patient to angiotensin

antagonist or converted enzyme inhibitors. Ferris cautions that renal secretion is expected to vary in patients with renal hypertension—and states that the renal secretion may be inappropriately high for the level of sodium found in the patients.

In studying the kidney as a causative agent in high blood pressure the matter of angiotensin sensitivity has to be considered. Ferris points out that it is inadequate to study only absorbtion levels of angiotensin—because there is another variable; the sensitivity for angiotensin by the receptors. Apparently angiotensin II attaches to a receptor and then this induced in some unknown manner contraction of the arterioles. It is reported that in tests for sensitivity to angiotensin patients with hypertension got a much greater rise from a set dose of angiotensin II than normal patients and Ferris feels that sodium is an important factor in determining the arteriole sensitivity to angiotensin II. One of the tests cited was that "a high sodium intake increased the amount of angiotensin II antibody required to nullify the pressor response to a dose of angiotensin II". Potassium is also said to influence the vascular reaction to angiotensin II; Ferris states that if the patient takes potassium in large amounts sensitivity to angiotensin increases and a low intake of potassium decreases sensitivity to angiotensin II.

An interesting point in the discussion of the article is whether or not intracellular sodium could change the arteriolar sensitivity to angiotensin II. In hypertension it has been shown that elevated sodium in the cells tend to be associated with an increased elevation of calcium as well. It is said that if intracellular sodium increases only 5% the contractile tension might increase as much as 50%. In any event, hypertension seems to increase the amount of intracellular sodium and why this is true seems to be a mystery.

Lastly, with regard to angiotensin sensitivity, Ferris says that there are some factors other than renin, sodium balance, and angiotensin which seem to play a role but are somewhat obscure.

Prostaglandins cause vasodilation and are found in the kidney. It is suspected that they act as a counterbalance to angiotensin II. Prostaglandins seem to have its affect close to where it is made because its half-life is only approximately 25 seconds. Since prostaglandins are made in the kidney they could act locally as a vasodilator and not exceed the known half-life. There are various prostaglandins made in the kidney and the purpose of these different prostaglandins is really not known but in a general way.

One interesting point that Ferris makes is that Prostaglandins E_2 may have an effect on sodium, which as noted above, has a bearing on the sensitivity of arterioles to angiotensin II. Prostaglandins might influence sodium excretion by altering the medullary blood flow. Another way could be through antagonizing the affect of anti-diuretic hormone. Ferris states that it is difficult to study renal prostaglandin synthesis; he does state that an experiment on rats which were depleted of prostaglandins developed high blood pressure after substituting a salt-water mixture for ordinary drinking water.

The author says that "in spite of evidence in animals that renal prostaglandins may affect sodium balance and blood pressure, rarely does hypertension or change in sodium excretion develop in humans receiving prostaglandin-inhibiting drugs".

There are two clinical studies in which renal prostaglandin synthesis is increased; Bartter's syndrome and pregnancy. Bartter's syndrome is said to have association with a decrease in sensitivity to angiotensin II; it is also associated with increased renal potassium wasting. Pregnancy has also been associated with increased sensitivity to angiotensin II; some investigators feel that toxemia may be related to a fall in prostaglandins.

All in all this is a very interesting review by Ferris.



"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Dr. Richard Thruston of Van Buren

Thomas A. Bruce, M.D.*

Few communities in mid-nineteenth century Arkansas stand brighter than Van Buren[1] in the number of prominent physicians who had origin there. One thinks immediately of the famous Dibrell family: Dr. James A. Dibrell, Sr., who began practice in Van Buren in 1840, had three sons,[2] two sons-in-law and two grandsons who became physicians. But perhaps the most eminent doctor in Van Buren's history was Richard Thruston, M.D.[3] Insofar as posterity is concerned, his medical skills seem almost incidental to his other achievements . . . his fortune was made from patenting fever pills, his fame grew out of becoming the first Professor of Agriculture at the new University in Fayetteville, and his major contribution to the state was probably none of these, but rather the development of fine orchards and vineyards that were hardy and productive in this section of America, leading to our present-day investment in fruit farming as a major factor in the state's economy.

Richard Thruston was born in 1814 in South Carolina. After completing formal medical training (details of his family and early schooling are missing) he married Miss Mary Jane Walker in Missouri and their only known daughter was born there in 1838. They moved soon afterward to Van Buren where he began medical and surgical practice. His interest in botanical preparations became heightened after a few years, and he began compounding his own pills for fever, ague and biliousness. These pills became quite the local celebrity and afforded him such a good income that he ultimately stopped the regular practice of medicine in the 1850's to develop his botanical interests on a commercial scale.[4] He was eminently successful in these horticultural pursuits, with nurseries and vineyards that built quite a reputation throughout Western Arkansas. But the nursery business, for all its fascination, was not a garden of leisure and contemplation; on September 29, 1871, he recalled his early attempts at fruit-growing in an *Arkansas Gazette* article:

> I have been planting fruit trees for the last quarter of a century . . . for the first half . . . I, together with Dr. James A. Dibrell, Jesse Turner, J. B. Ogden, and the late James G. Stevenson, of this county, were considered as mere pioneers and experimentalists in pomology. The subject of fruit culture in the South . . . was looked upon as a myth . . . I applied to northern nurseries for trees to plant an orchard; received and planted an extensive variety of apples, pears, cherries, plums, strawberries, raspberries, etc.; . . . All fall varieties ripened in the early summer, whilst winter varieties were ripe the last of August . . . which the almost undiminished heat of our climate soon consigned them in mast to general rot and ruin . . . The above were all trees and plants from New York and Ohio nurseries, many of them brought to me by Yankee tree peddlers . . . It must not be inferred from what is written above that we cannot raise good fruit in Arkansas. On the other hand, we can and do raise it in abundance. All that is wanted is the right kind of acclimated trees.

He operated the Van Buren Nursery, specializing in "Southern Fruit Trees for Southern Planters" for nearly thirty years. In a newspaper notice[5] he described 30,000 trees for sale, and it is known from other advertisements that he had fifteen varieties of strawberry plants, twelve varieties of raspberries, eighteen varieties each of cherry and plum trees, over sixty varieties of apple, plus quince, peach, nectarine, apricot, ammon (sic), domesticated gooseberry and blackberry, and many fine grapes. In later years the large apple industry moved farther to the north, centering in Washington County, but the peach

*Former Dean, College of Medicine, University of Arkansas for Medical Sciences, Little Rock, Arkansas.

and grape growers stayed in the river valley with the great vineyards nestled on the protected southern slopes of the Ozark hills.

Dr. Thruston is known to have had a fondness for guns, and he was an excellent huntsman. He was a close personal friend of General Albert Pike,[6] who was a frequent visitor at his home. In August 1848 he was the surgeon and a second to Pike during a duel fought with John S. Roane (later Governor of Arkansas) over a dispute which developed while the two were army officers in the Mexican War. The duel was fought in Indian Territory, at a point across the river directly opposite Fort Smith. Three shots were exchanged at ten paces, and though both men were experts with the pistol none of the shots landed. A reconciliation followed, and all parties adjourned to a banquet in Fort Smith; Pike and Roane later became friends and companions.[7]

In the 1850's a Circuit Court case[8] drew considerable excitement when Dr. Thruston killed a man named Harger and a coroner's jury returned a verdict of justifiable homicide. According to an account in Goodspeed's History of Northwest Arkansas, 1889, "the enemies of the old hunter (Thruston) persecuted him until his friends asked for trial. Two grand juries refused to make an indictment but finally, at the request of Dr. Thruston, H. F. Thomason secured a trial and he was acquitted without argument".

The long-delayed opening of the state's land grant University in 1872 was a special time for celebration. Ten faculty members were appointed that first year, and Richard Thruston from Van Buren, Professor of Practical and Theoretical Agriculture and Horticulture, was the only one with a doctoral degree.[9] He gave a series of twelve lectures to a new group of students, traveling weekly back and forth by horseback from Van Buren to Fayetteville. Why some of the prominent horticulturists in Washington County were not asked to teach will always be a mystery, and why Thruston went to the enormous effort to undertake the post is an even greater puzzle. That he learned from that year of long horseback rides seems clear, however, for he was not listed in the University catalogue after 1873.

The significance of his appointment should not be missed, nonetheless. The primary purpose of a land grant university was to emphasize agriculture[10] as a practical complement to the traditional liberal arts education of the colleges of that day. Physicians were the principal men of science in the towns, and it is not surprising that a subset became excellent horticulturists, considering that the products of a botanic or "physic" garden were essential to their practice. Dr. Thruston makes physicians proud through time immemorial that a member of the medical profession was honored with such an important charter assignment.

In his obituary[11] in 1885, he was described as a "genial and courteous gentleman of the old school". He was survived by his widow and by Margaretta, his only daughter, who became the wife of U. S. Senator Bowen of Colorado. The old Thruston home in Van Buren today, one hundred years after his death, is the site of the King School.

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1. "For long years before the (Civil) war Van Buren was the pleasantest, politest, richest and most attractive town in the Arkansas Valley. But the war emptied its warehouses and stores; owls and bats took possession; grass grew in its streets, and its churches and schools were ruined ..." Van Buren *Press,* October 26, 1866.
2. Dr. James A. Dibrell, Jr. became a founder of the Medical Department in Little Rock and was its second dean.
3. Spelled incorrectly as "Thurston" in some earlier treatises.
4. Dr. Thruston appears to have been ambivalent about continuing his practice even earlier. Announcement: DR. THRUSTEN, HAVING AT LENGTH RESOLVED ON REMAINING IN ARKANSAS, WILL THEREFORE RESUME THE PRACTICE OF MEDICINE IN VAN BUREN AND ITS VICINITY. Van Buren *Intelligencer,* July 15, 1843.
5. Fort Smith *Tri-Weekly Bulletin,* July 17, 1862.
6. General Pike referred to the doctor in a letter as "My dearest and best and truest old friend" (Arkansas History Commission, clipping file 1.132). On March 23, 1848, the Van Buren *Intelligencer* carried the death notice of Albert Pike Thruston, son of Dr. Richard and Mary Jane Thruston, who had died at the age of five years and one month.
7. *Biographical and Pictorial History of Arkansas* by John Hallum, 1889.
8. Recalled only from the memory of a witness, since all Crawford County records were burned in a fire in 1872.
9. Two, however, were generals and one was a lieutenant; two of the faculty had Master's degrees and one had a Baccalaureate degree.
10. The purposes of the Arkansas Industrial University, as described in the first catalogue, were:
First: To impart a knowledge of science and its application to the arts of life.

Second: To afford students, such as may desire it, the benefits of manual labor (for remuneration, the preservation of health, and a taste for the pursuits of agriculture and the mechanical arts).
Third: To prosecute experiments for the promotion of agriculture and horticulture.
Fourth: To provide a means of instruction in military science.
Fifth: To afford the means of a general and thorough education . . .

11. *Arkansas Democrat* September 10, 1885.

Groundbreaking for Building to House Society Headquarters Office

On August 28, 1985, there was a groundbreaking ceremony for the "Arkansas Medical Society Building" to be constructed at West Markham and Corporate Hill Drive in Little Rock. Dr. John P. Burge of Lake Village, president of the Society, presided. Dr. Burge gave a brief review of the history of the Arkansas Medical Society and the decision to move the headquarters office to Little Rock. His remarks are printed below.

The mayor of Little Rock, Tom Prince, and the president of the Great Little Rock Chamber of Commerce, Bob Russell, welcomed the Society to Little Rock.

Dr. Joseph Norton, a past president of the Society and a member of the Building Committee, presented a summary of the building development and recognized the people in the development team. Dr. Norton's summary appears below.

Dr. Larry Lawson, Chairman of the Council of the Arkansas Medical Society, introduced officers of the Society who were present. Dr. Lawson also gave recognition to a number of individuals who spent much time and effort in enrolling limited partners for the building project.

Dr. Charles Logan, a member of the Building Committee, presented the following listing of physician investors in the building limited partnership: John E. Bell, Searcy; Dennis W. Berner, Russellville; Banks Blackwell, Pine Bluff; R. Kingsley Bost, Russellville; John P. Burge, Lake Village; Jay O. Brainard and Joseph Buchman of Little Rock; Joe B. Colclasure of Little Rock; Asa Crow of Paragould; Warren M. Douglas of Little Rock; Robert E. Elliott of Searcy; Lawson E. Glover, Jr., of Little Rock; Stephen D. Holt of Little Rock; Ted Honghiran of Russellville; Raymond A. Irwin of Pine Bluff; Ralph S. Izard of Bryant; David C. Jacks of Pine Bluff; Gilbert D. Jay, III, of West Memphis; W. Ray Jouett of Little Rock; W. Payton Kolb, Little Rock; James F. Kyser, Little Rock; Lloyd G. Langston, Pine Bluff; J. Larry Lawson, Paragould; Kenneth E. Lilly, Fort Smith; Charles W. Logan, Little Rock; Jim E. Lytle, Batesville; Edward B. Miedema, Searcy; Gopakumar Maruther and William R. Mashburn of Hot Springs; Frank E. Morgan of North Little Rock; Joseph A. Norton, Little Rock; Francis M. Patton, Helena; James J. Pappas, Little Rock; Eldon D. Pence, Jr., Fort Smith; George Roberson, Pine Bluff; Charles H. Rodgers, Little Rock; Arthur E. Squire, Little Rock; Stanley D. Teeter, Russellville; Billy L. Tranum, Little Rock; James R. Weber, Jacksonville; and C. D. Williams, Little Rock.

REMARKS OF JOHN P. BURGE
President, Arkansas Medical Society

As president of the Arkansas Medical Society, I welcome all of you here on this landmark date



Drs. Joe Norton, James Pappas, Charles Logan, Ken Lilly, John P. Burge, and J. Larry Lawson turn spades of dirt at the site for the new headquarters office building.

in history of our Society. My name is Jack Burge and I am from Lake Village. The decisions leading up to today's event took place over a span of several years. The most activity being during the past two years. It had been my intention to ask the presidents of the Medical Society for the preceeding two years, Dr. Asa Crow of Paragould and Dr. Charles Wilkins of Russellville, to stand with me today for this but, unfortunately, they could not be here.

The person who should be speaking to you this afternoon is Dr. Lloyd Langston from Pine Bluff. Lloyd is the chairman of the Building Committee and the leader in the development of this project. When we were trying to determine a date to hold this ceremony, today seemed logical since a large number of physicians would be in town for various meetings. However, Dr. Langston had other commitments and could not attend.

For those of you who may not be familiar with the Arkansas Medical Society, our headquarters is currently in Fort Smith. Our organization was established in 1875 and at present has over 2,700 members who are practicing physicians or medical students. The Society has been involved with almost every aspect of the development of medical care in Arkansas. Our organization exists to improve the quality of medical care and to advance medical education. It is the voice of organized medicine in Arkansas.

Discussions involving the movement of our headquarters from Fort Smith to Little Rock have been going on for years. In 1981, a long-range planning committee was appointed and charged with the responsibility of making recommendations regarding the future direction of the Arkansas Medical Society. One of their recommendations was that the Society headquarters be moved to a more central location. In 1983, a consulting firm was hired and the consultants' recommendations were presented to the House of Delegates of the Arkansas Medical Society at its convention in April of 1984. The House of Delegates voted to move the Society headquarters to a central location in Arkansas. A Building Committee was appointed consisting of Dr. Lloyd Langston of

Pine Bluff, Dr. Joe Norton of Little Rock and Dr. Charles Logan of Little Rock. It is they who deserve most of the credit for the development and implementation of this project. The Society will not own this building. It will be owned by 41 partners with the Society as a long-term tenant. We are proud to be moving our headquarters here and to be a part of the growth of Little Rock.

REMARKS BY JOE NORTON

Member of Building Committee and Past President Arkansas Medical Society

Friends: I know it is hot—it is smoky—it is windy—but I have some things I want to say—so stay with me!

The Arkansas Medical Society formed a Building Committee soon after the decision was made to move the office to Central Arkansas. Drs. Lloyd Langston, Charles Wilkins, Larry Lawson, Charles Logan and I made up the committee, with Dr. Langston as chairman.

After many interviews, we selected Flake and Company to guide us, selected this site for our building, chose Blass, Chilcote, Carter, Lanford, and Wilcox as architects, picked Kinco, Inc., as general contractor, accepted Worthen Bank and Trust Company for financing, used Tom Overbey and Neil Deininger as attorneys, and Peat, Marwick, Mitchell and Company as accountants. Our own Society office and legal staff gave us great support. As we worked through all this, we made reports regularly to the Society Executive Committee, the Council, and to the House of Delegates.

The building will be three stories tall and contain 27,000 square feet of rentable space. The Arkansas Medical Society will occupy about 30% of that space. There is ample parking planned. The structure will be a fire resistant steel building with exterior walls of double insulated, bronze reflective glass and sandblasted concrete panels. Elevators, entrances and parking are designed to facilitate the handicapped. There will be at-grade access to two of the three floors.

The work here has started—the scheduled completion date is May 1 of next year, 1986. We are here to break ground at this building site.

I am convinced that the Arkansas Medical Society needs to be close to the major center of government, of business and industry, of socio-economic groups, and of scientific and educational groups. I am convinced that this central geographic location will best serve our members over the entire State and will be more visible and accessible to others who might do business with our Society.

Once the decision to locate in Little Rock was approved and responsibilities were assigned and accepted, the whole process of selecting an advisor-developer, locating a site, choosing an architect, a contractor, legal and financial consultants moved very quickly—all this thanks to dedicated, effective professional effort by all involved. I will not be personal and name names—too many have been involved and the witness of their individual and collective effort is before us today.

We are about to turn the spade in this good earth.

But first let us remember, with respect and with gratitude, the tremendously effective, responsible help that has been given our Medical Society through the years by those lay individuals and those Society members while we were located in Fort Smith. Thanks to you all. I ask you to continue to give to us in Central Arkansas and the rest of the State your leadership so that we may be encouraged to greater participation by your fine example.

So, then, let us dedicate ourselves anew to these goals:

1. A more effective Arkansas Medical Society organization;
2. A more extensive involvement in Arkansas Medical Society matters by all Society members, and an extension of membership;
3. An open door and a more frequent cooperative intercourse with governmental agencies, with business and industry groups, with our University of Arkansas Medical School, and with other responsible, legitimate individuals and groups that seek to work with our Society to improve, to extend, and to make financially feasible medical diagnosis and treatment, the maintenance of good physical and mental health, the rehabilitation of patients, and the prevention of disease and accident.

Let us be at our task—and God bless us all!



Architect's Illustration of Arkansas Medical Society Building.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

PSYCHIATRY UPDATE 1985

Presented by G. Richard Smith, M.D., and Philip Mizell, M.D., *November 2-3, 8:30 a.m.-12:00 noon,* Ramada Inn, Eureka Springs. Approximately six hours Category I credit. APS members: $75; non-members: $30. Sponsored by UAMS.

SECOND ANNUAL PERINATAL CONFERENCE ON HEALTH CARE

Presented by Frank Miller, M.D., and Becky Butler, L.C.S.W., *November 8-9, (November 8: 8:00 a.m.-3:00 p.m.; November 9: 8:00 a.m.-12:00 noon,* Camelot Hotel, Little Rock. Eight and one-half hours Category I credit. Fee: $60 for physicians, $30 for other health professionals. Sponsored by UAMS.

ONCOLOGIC RADIOLOGY: CURRENT DIAGNOSTIC AND INTERVENTIONAL ASPECTS

Presented by Howard Barnhard, M.D., *November 8-9,* Hilton Inn, Little Rock. Sponsored by UAMS. Contact UAMS Office of Continuing Education for Physicians for additional information.

TOPICS IN CLINICAL NUTRITION

November 15-16, University Conference Center (adjoins the Excelsior Hotel), Little Rock. Seven and one-half hours Category I credit. Sponsored by Arkansas Children's Hospital. For more in-

formation, call Arkansas Children's Hospital—370-1481.

COLON DIVERTICULAR DISEASE

Presented by Dr. Michael Stair, *November 18, 6:00 p.m.,* Dining Room, Memorial Hospital, North Little Rock. One hour Category I credit. Sponsored by Memorial Hospital.

HYPERTENSION IN THE EIGHTIES, FOCUS ON NEW COMPOUNDS

Presented by A. J. Thompson, M.D., *November 21, 7:30 p.m. to 9:30 p.m.,* Gaston's Resort or Baxter County Regional Hospital, Mountain Home. Two hours Category I credit. Sponsored by Baxter County Regional Hospital.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC-South Arkansas.
Colposcopy-Pap Smear Clinic, fourth Tuesday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, second and fourth Thursday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Gyn-Pathology Conference, second Friday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Pediatric Conference, second and third Friday, 12:30 p.m. to 1:30 p.m., (second Friday, Warner Brown Hospital, third Friday, Union Medical Center).

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology Conference, second Thursday, 3:00 p.m., Conference Room, Building 1.
Radiology Conference, third Thursday, 1:00 p.m., Conference Room, Building 1.
ICU Lecture Series, second Friday, 1:30 p.m., Conference Room, Building 1.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pulmonary Conference, each Monday, 3:00 p.m., Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neurology Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
General Pediatric Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Surgery Conference, each Monday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pathology Conference, first, second, fourth and fifth Thursday, 12:00 noon to 1:00 p.m., Pathology Library.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #2.

LITTLE ROCK — ST. VINCENT INFIRMARY

Interhospital GI Problems Conference, first Monday, 6:00 p.m. to 7:30 p.m., Classroom 3, Education Wing.
Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom I, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Fellowship Training in Percutaneous Transluminal Coronary Angioplasty. Ongoing program, UAMS Cardiac Catheterization Laboratory, Little Rock. Hour for hour basis Category I credit. $100 fee. Sponsored by UAMS.
Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interhospital GI Problems Conference, first Monday, 6:00 p.m., St. Vincent Infirmary, Classroom 3, Education Wing.
OB/Gyn Grand Rounds, each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/135.
Mental Health Services Grand Rounds, dates TBA. 10:00 a.m., Arkansas Mental Health Services Administration Building, third floor conference room.
Psychiatry Grand Rounds, each Thursday, 12:00 noon, UAMS Child Study Center Auditorium.
Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Ed II Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS Ambulatory Care Center Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Ed II Building, Room G/135.
Arkansas Academy of Pathology, first Wednesday, 5:30 p.m., Coy's Restaurant.
Surgical Science Conference, each Saturday, 8:00 a.m., Ed II Building, Room G/131.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Psychiatry Service Lecture Series, each Wednesday, 1:00 p.m., NLRVA, Building 170.
VA Medicine Service Teaching Conference, each Monday, 3:30 p.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.

NORTH LITTLE ROCK — MEMORIAL HOSPITAL

Problem Case Conference, third Wednesday, 12:00 noon, Assembly Room, Memorial Hospital.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC-SOUTHWEST

Tumor Conference, November 6 and December 4, 7:00 a.m., St. Michael Hospital.
Chest Conference, November 20, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



THINGS TO COME

October 25-26

Fall Meeting, Arkansas Orthopaedic Society. Capital Hotel, Little Rock. Meeting will be dedicated to the history of Orthopaedics in Arkansas. For further information, contact Mr. Mike Stephenson, 305 Skyline Drive, Russellville, Arkansas 72801; telephone 968-2124.

November 7-9

Arkansas Society of Internal Medicine and American College of Physicians. Arkansas Scientific Meeting. Red Apple Inn, Heber Springs. Registration: $70 for ACP masters, fellows, members/ASIM members; exempt for ACP Associates; $100 nonmembers. Keynote speakers will be Dr. Joseph F. Boyle, executive vice president of the American Society Internal Medicine and Immediate past president of AMA; Eugene A. Hildreth, FACP, Regent, American College of Physicians, Philadelphia; Roger C. Bone, FACP, Professor and Chairman, Department of Medicine, Rush-Presbyterian-St. Luke's Medical Center in Chicago; and Peter F. Kohler, FACP, Professor of Medicine, Tulane University School of Medicine, New Orleans.

Topics will include Rheumatology Update, Testing and Treatment in Critical Care Medicine, Update in General Internal Medicine Based on Case Study, and Impact of Current and Pending Legislation on Medical Practice. For further information, contact Dr. Joe B. Hall, 675 Lollar Lane, Fayetteville, Arkansas 72701.

November 12-13

National Conference on Health Policy and Quality of Care for Older Americans. Cosponsored by the American Hospital Association, American Association of Retired Persons, American Nurses' Association, and American Medical Association. Radisson Mark Plaza Hotel, Alexandria, Virginia. Registration fee $175. For further information, contact Department of Health Care Resources, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

1986

January 13-17

Interventional, MRI and Neuroradiology. Fairmont Hotel, San Francisco. Sponsored by the University of California School of Medicine in San Francisco. For further information, contact the Department of Radiology, University of California School of Medicine, San Francisco 94143.

January 20-21

Diagnostic Radiology Seminars. Camino Real, Ixtapa, Mexico. Sponsored by the University of California School of Medicine in San Francisco. For further information, contact the Department of Radiology, University of California School of Medicine, San Francisco 94143.

February 7-9

The Advanced Hair Replacement Surgery Symposium. Sponsored by the American Academy of Facial Plastic and Reconstructive Surgery. Stough Dermatology and Cutaneous Surgery Clinic and the Majestic Hotel, Hot Springs. The program is accredited for 16 hours in Category 1. Registration fee is $525 for AAFPRS members if received before December 31; $575 after December 31. Non-member registration fee is $600 if received before December 31; $650 after December 31. Residents may register for $225. Fees include meals and social functions.

For further information, contact Kathleen Masterson, Congress Coordinator, The Stough Dermatology and Cutaneous Surgery Clinic, P.A., Doctors Park Building, Hot Springs 71901; telephone 624-0673.

February-May 9

Twenty-Seventh Postgraduate Institute for Pathologists in Clinical Cytopathology. Johns Hopkins University School of Medicine. February-April, Home Study Course A, personal reading and microscopic study in personal laboratory.

April 28-May 9, In-Residence Course B. Concentrated lecture series, intensive laboratory, and vital clinical experience at the Johns Hopkins Medical Institutions, Baltimore, Maryland.

Courses designed solely for pathologists who are certified (or qualified for certification) by the American Board of Pathology or its international equivalent. 152 AMA Category I credit hours in both courses.

For further information, contact John K. Frost, M.D., 604 Pathology Building, The Johns Hopkins Hospital, Baltimore, Maryland 21205.

April 17-20

Annual Session of the Arkansas Medical Society. Excelsior Hotel and Statehouse Convention Center, Little Rock.



PERSONAL AND NEWS ITEMS

DR. SEALE RETURNS

Dr. Karen Seale recently returned to the University of Arkansas for Medical Sciences after a six-month foot and ankle surgery fellowship. Following her residency at the University, Dr. Seale served for two and one half years as Head of the Section of Trauma Surgery. Dr. Seale is also affiliated with the John L. McClellan Memorial Veterans Hospital and the Arkansas Children's Hospital.

DR. TEXTER RECEIVES CHAIR APPOINTMENT

Dr. E. Clinton Texter, Jr., of Little Rock has been installed as the first occupant of the Jerome S. Levy Chair in Gastroenterology at the University of Arkansas for Medical Sciences.

DR. WALLEY IN HOT SPRINGS

Dr. Luther Walley has opened an office in Suite 406 of the Medical Resource Center in Hot Springs for the practice of Plastic Surgery.

DR. ELLIOTT MAKES DONATION

Dr. Robert Elliott of Searcy has donated $10,000 for the purchase of a field in the Searcy Sports Complex. His contribution will be used for the purchase of a field in the complex for younger boys and the field will be named in his honor. Dr. Elliott was a member of Searcy's first Little League team in 1951.

DR. BUTCHER BEGINS PRACTICE

Dr. Steve Butcher, a graduate of Kirkville College of Osteopathic Medicine in Missouri, is practicing in Helena and Marianna.

DR. EDITH IRBY JONES HONORED

Dr. Edith Irby Jones has been honored as an outstanding alumnus of the University of Arkansas College of Medicine. A portrait of her will hang in the entrance hall of the College. Dr. Jones was the first black graduate of the University College of Medicine. Dr. Jones practices Internal Medicine in Houston. She was recently installed as the first female president of the National Medical Association.

DR. SUDDERTH IN BRYANT

Dr. Brian Sudderth has joined Dr. Ted Hood at the Bryant Family Clinic.

DR. HEARNSBERGER ELECTED

Dr. John Hearnsberger of Nashville has been re-elected president of the Howard County Unit of the American Cancer Society.

DR. JOHNSON MOVES

Dr. Paulette Johnson, formerly of Jacksonville, has moved to Hot Springs. She is a Pediatrician with her office in Suite 3 at 225 Linden.

DR. MIZE IN CORNING

Dr. Samuel Mize has opened an office in Corning for the practice of General Surgery.

DR. McCRARY ELECTED TO BOARD

Dr. George McCrary of Jacksonville has been elected to serve on the Jacksonville Police Pension Board.

NEW DOCTORS IN FORREST CITY

Dr. Ralph M. Bard has opened an office for the practice of General and Vascular Surgery at 1740 Lindauer Road in Forrest City. Dr. Shirley Bard is practicing Pediatrics with Forrest City Pediatrics at 1529 Lindauer. They moved to Forrest City from Chattanooga, Tennessee.

DR. FRENCH RETIRES

Dr. James French of Hot Springs has retired from the practice of medicine. He was the guest of honor at a "Roasting Ceremony" sponsored by the Surgery Department of St. Joseph's Regional Health Center. Dr. French received a plaque from the operating room staff in honor of his twenty-eight years of service.

DR. NELSON JOINS CLINIC

Dr. Steve Nelson has joined the Bailey Clinic in Greenwood for the practice of Family Medicine.

DR. McCARTHY ELECTED TO FELLOWSHIP

Dr. Richard McCarthy of Little Rock was recently elected to the fellowship in the American Academy of Pediatrics.

DR. BROWN IN TRUMANN

Dr. Mark Brown, a Family Physician, has opened an office in the Trumann Medical Complex.

DR. ANDERSON RETURNS TO STATE

Dr. Rupert C. Anderson has joined the staff of the Medical Park Hospital in Hope. Dr. Anderson specializes in General Surgery.

SLEEP DISORDERS CENTER

Sleep apnea and daytime hypersomnolence are very common and debilitating sleep disorders. The diagnosis requires thorough sleep disorders

evaluation with detailed evaluation of the patient's sleep. The overnight sleep laboratory test involves monitoring and recording by means of the following physiologic signs: EEG, EKG, respiration (respiratory effort, oral and nasal ventilation, arterial oxygen saturation), eye movements, chin muscle tone, leg muscle activity, as well as by an audio-visual system for some cases. The management of these sleep disorders requires the help of multiple specialists, in particular a clinical polysomnographer (a certified sleep disorders specialist), a certified polysomnogram technologist, pulmonologist, otolaryngologist, neurologist and dietition. The Sleep Disorders Center, at the University of Arkansas for Medical Science, has these specialists to assist in diagnosis and recommending appropriate treatment for these sleep disorders. Lawrence Scrima, Ph.D., A.C.P., Director of the UAMS Sleep Disorders Center, is the only board certified clinical polysomnographer in Arkansas.

Recently, Dr. Scrima spoke to over 2,000 ENT physicians at the World Congress of Otolaryngologists in Miami Beach, Florida. He was invited to address the topic of how to evaluate the level of surgical success in patients with obstructive sleep apnea. Among the most popular surgical procedure is the uvulopalatopharngoplasty (UPP). He stressed in his talk that physicians should be aware of the fact that this procedure is successful in reducing obstructive sleep apnea to subclinical levels in up to 60 percent of the cases. The remaining patients (40%) continue to have pathologically significant obstructive sleep apnea and moderate to severe hypoxic events (Sa02:42-74). Such events can cause persisting excessive daytime sleepiness, severe hypoxia, cardiological arrhythmias and hypertension, despite the fact that the patient may no longer snore and feel more alert than preoperatively.

The only way to be certain of the patient's status postoperatively is to do a polysomnogram to obtain this objective vital information. The results of the pre and post surgery polysomnograms can then be compared to accurately assess the patient's medical status. In patients who continue to have pathologically severe obstructive sleep apnea, a new device is now available through the University of Arkansas for Medical Sciences Sleep Disorders Center that generates continuous positive air pressure and can be used by the patient to keep the airway open during sleep. This device can also be used in lieu of surgery, particularly for the obese patient with normal airways who may eventually benefit from weight reduction.

The Sleep Disorders Center of the University of Arkansas for Medical Sciences has medical professionals to assist patients in all of these therapeutic approaches. The Center also provides diagnostic testing for all other sleep disorders and recommends appropriate treatments for the referring physician to follow. In addition, the Center is currently conducting a three-year National Institute of Health funded investigation to study the effects of alcohol on breathing during sleep, as well as other studies related to narcolepsy, nocturnal myoclonus, insomnia, and the effects of nasal packing for epistaxis on sleep.

For further information about the Center, call 501-661-6306.

LUNG PROGRAM

Drs. Owen Clopton and Joseph Teply of Jonesboro participated in a television program on "Lung Disorders" sponsored by St. Bernard's Regional Medical Center.

DR. ROZZELL MOVES TO GURDON

Dr. Allen R. Rozzell has joined the Gurdon Medical Clinic for the practice of Family Medicine.

DR. JAY AND DR. BROWN JOIN THE UNIVERSITY STAFF

Dr. Walter M. Jay has been appointed Associate Professor of Neuro-Ophthalmology and Dr. Michael F. Brown has been appointed Assistant Professor of Cornea and External Disease in the Department of Ophthalmology at the University of Arkansas College of Medicine.

DR. TOWNSEND HONORED

Dr. T. E. Townsend has provided more than thirty-one years of devoted medical care to thousands of Southeast Arkansas children. In recognition of Dr. Townsend's service, the Pine Bluff Chapter of TWIGS (Teamwork Increases Growth and Sharing) sponsored "For the Love of Children" on September 26, 1985, at the Pine Bluff Convention Center. The tribute to Dr. Townsend benefitted the Arkansas Children's Hospital. Dr. Townsend is a past president of the Arkansas Medical Society. In addition to his work in organized medicine, he has been active with the Jefferson County Health Department, Southeast Arkansas Mental Health Center, Arkansas Methodist Children's Home, Arkansas Children's Hos-

pital, and the First Methodist Church. In 1984, he was honored as "Teacher of the Year" by the Family Practice program in Pine Bluff.

DR. FUTRELL NAMED GRAND MARSHAL

Dr. J. B. Futrell was Grand Marshal of the Annual Labor Day Parade in Rector. Dr. Futrell has practiced in Rector for fifty-five years.

DR. McLEAN IN WILSON

Dr. Joseph A. McLean has joined the Wilson Clinic for the practice of Family Medicine.

DR. MILLER HOSTS SHOW

Dr. Forrest B. Miller of Little Rock hosts a medical call-in program on KARN television station. The show is telecast from 12:00 noon to 1:00 p.m. Monday through Friday.

EL DORADO GAINS PHYSICIANS

Dr. Robin P. Ray, a pediatrician, has opened an office in Suite 302 of the South Arkansas Professional Plaza, 403 West Oak, in El Dorado.

Dr. Gary L. Bevill has opened an office for the practice of Family Medicine in Suite 303 of the South Arkansas Professional Plaza.

DR. CLEWANS GUEST SPEAKER

Dr. Harvey Clewans of Blytheville discussed "The Workings and Advantages of a CAT-Scan" at a recent meeting of the Blytheville Kiwanis Club.



NEW MEMBERS

DR. DENNIS B. YELVINGTON

Dr. Yelvington has joined the Arkansas County Medical Society. He is a native of Memphis, Tennessee.

Dr. Yelvington received a Bachelor of Arts degree in Zoology from the University of Arkansas in Fayetteville in 1971 and a Master of Science degree in Physiology from the University of Arkansas for Medical Sciences in 1978. He is a 1982 graduate of the University of Arkansas College of Medicine.

His internship and residency in Family Practice were with St. Bernard's Hospital and the Northeast Area Health Education Center in Jonesboro.

Dr. Yelvington specializes in Family Practice. He is associated with the Stuttgart Medical Clinic in Stuttgart.

DR. JOHN WARREN JACKS

Dr. Jacks, a native of Coats, Kansas, is a new member of the Benton County Medical Society.

He received a Bachelor of Arts degree from the University of Kansas. He is a 1948 graduate of the University of Kansas School of Medicine. Dr. Jacks interned with Indianapolis General Hospital. He is board certified in Family Practice.

Dr. Jacks has served with the United States Navy.

He practiced in Pratt, Kansas, from 1950 to 1982. Dr. Jacks is a past president of the Kansas Academy of Family Practice. He served on the Kansas Blue Cross Board of Directors for eight years and as chairman of the board for two years.

Dr. Jacks moved to Bentonville in 1982 and is associated with the Bentonville Clinic at 408 North Walton Boulevard. He specializes in Family Practice.

DR. FRED A. MERKEL

Dr. Merkel has joined the Bradley County Medical Society. He was born in Reading, Pennsylvania.

He is a 1975 graduate of Arkansas Tech University and a 1982 graduate of the Kirksville College of Osteopathic Medicine in Missouri. His internship was with Kirksville Osteopathic Hospital and his Family Practice residency was with Botsford General Hospital in Farmington Hills, Michigan. He is board certified in Family Practice.

Dr. Merkel has joined the Hermitage Health Center on 14th Street in Hermitage for the practice of Family Medicine.

DR. RICHARD E. DAILY

Dr. Daily, a native of Mulberry, is a new member of the Crawford County Medical Society.

He is a 1975 graduate of the University of Cen-

tral Arkansas in Conway and a 1979 graduate of the University of Arkansas College of Medicine. His internship was with Baptist Medical Center in Little Rock. He practiced for four years in Harrison.

Dr. Daily has joined the staff of the Crawford County Memorial Hospital in Van Buren for the practice of Emergency Medicine.

DR. JOHN W. SORRELS

Dr. Sorrels has joined the Garland County Medical Society. He was born in San Angelo, Texas.

Dr. Sorrels attended San Angelo State University and received a Bachelor of Science degree in Pharmacy from the University of Texas in 1973. He was graduated from the University of Texas Southwestern Medical School at Dallas in 1978. His internship and residency were with the University of Arkansas Medical Center and the Veteran's Administration Hospital in Little Rock. Dr. Sorrels is board certified in Internal Medicine.

He did Emergency Medicine work for various hospitals in Arkansas and Texas from 1981 to 1984. Dr. Sorrels began practicing in Hot Springs in 1984.

Dr. Sorrels specializes in Internal Medicine. He is affiliated with the Hot Springs Internal Medicine Associates at 615 West Grand, Suite 5.

DR. RICHARD L. TAYLOR

Dr. Taylor, a new member of the Jefferson County Medical Society, was born in Clarksville.

He received a Bachelor of Science in Medical Technology in 1977 from Arkansas Tech University in Russellville. Dr. Taylor also studied Medical Technology at the University of Arkansas College of Health Related Professions. He is a 1982 graduate of the University of Arkansas College of Medicine. Dr. Taylor completed a Family Practice residency with the Pine Bluff Area Health Education Center.

Dr. Taylor is an Assistant Professor with the Area Health Education Center at 1421 Cherry Street in Pine Bluff.

DR. JOHN R. HANN

Dr. Hann is a new member of the Lawrence County Medical Society. He was born in Minneapolis, Minnesota.

His premedical education was with the Wartburg College in Waverly, Iowa, and the University of Minnesota. He is a 1982 graduate of the University of Minnesota Medical School. Dr. Hann served his internship at Southern Illinois University Affiliated Hospitals in Quincy.

Dr. Hann is in General Practice at 201 Walnut in Imboden

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The Mississippi County Medical Society has added three new members to its roll:

DR. ANTON M. ALLEN

Dr. Allen was born in Bethesda, Maryland. He is a 1977 graduate of College of William and Mary in Williamsburg, Virginia, and a 1981 graduate of the Medical College of Virginia School of Medicine.

His residency training in Diagnostic Radiology was with the Medical University of South Carolina College of Medicine in Charleston. Dr. Allen is board certified in Radiology.

Dr. Allen practices in Radiology at Chickasawba Hospital in Blytheville.

DR. CHARLES M. FRIEDMAN

Dr. Friedman, a native of Knoxville, Tennessee, was graduated Cum Laude in 1976 from the Vanderbilt University in Nashville, Tennessee. He is a 1980 graduate of the University of Tennessee College in Memphis.

Dr. Friedman served a Pediatric internship at the University of Minnesota Affiliated Hospitals in Minneapolis. His residency training in Radiology was with the Baptist Memorial Hospital in Memphis, Tennessee.

He joined the staff of the Department of Radiology at Chickasawba Hospital in Blytheville in July 1985. His mailing address is Post Office Box 108, Blytheville 72316.

DR. CATHERINE J. OSTER

Dr. Oster was born in Memphis. She is a 1976 graduate of the University of Tennessee and a 1981 graduate of the University of Tennessee College of Medicine in Memphis.

Dr. Oster served her internship and residency with the Department of Medicine at the University of Tennessee Center for Health Sciences College of Medicine.

Dr. Oster began practice in Internal Medicine in Osceola in January. Her office address is Suite A, 602 West Union.

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DR. LAWRENCE A. MENDELSOHN

Dr. Mendelsohn, a new member of the Pulaski County Medical Society, was born in Fort Smith.

He is a 1976 graduate of the University of Arkansas and a 1980 graduate of the University of Arkansas College of Medicine. His Internal

Medicine internship was with the Michael Reese Hospital in Chicago. Dr. Mendelsohn was an Internal Medicine resident at the University of Arkansas Medical Center from 1981 to 1983. He served a two-year Hematology and Oncology Fellowship at the University of Kentucky Medical Center in Lexington. He is board certified in Internal Medicine.

Dr. Mendelsohn specializes in Hematology and Oncology. He practices at #1 St. Vincent's Circle in Little Rock.

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INTERN AND RESIDENT MEMBERS

The Jefferson County Medical Society has added seven members to its membership roll. All are graduates of the University of Arkansas College of Medicine who are in training with the Area Health Education Center in Pine Bluff. They are: C. M. Nichol, a third-year resident; Thomas S. Duckworth, a second-year resident; Clifford A. Boswell, Cary M. Crawford, J. Craig Cummins, Michael E. Jones, and Paul Jeffrey Mooser, all 1985 graduates of the College of Medicine.

RESOLUTIONS



DR. BARNEY P. BRIGGS

WHEREAS, the membership of the Pulaski County Medical Society notes with sincere sorrow the recent death of an esteemed colleague, Barney P. Briggs, M.D., and

WHEREAS, he had been a valued member of this Society for forty-seven years and had contributed generously of his time to the Society's programs, and

WHEREAS, he was an acknowledged leader in community programs relating to this specialty of Pediatrics.

BE IT THEREFORE RESOLVED:

THAT, this resolution be adopted and entered into the permanent records of the Society, and

THAT, a copy of this resolution be forwarded to Dr. Briggs' family as an expression of our sincere sympathy, and

THAT, a copy be forwarded to the Journal of the Arkansas Medical Society for publication.

ADOPTED: Pulaski County Medical Society
Executive Committee

DR. NICHOLAS T. HOLLIS

WHEREAS, the members of the Pulaski County Medical Society note with sincere sorrow the recent death of an esteemed colleague, Nicholas T. Hollis, M.D., and

WHEREAS, he was recognized as one of the pioneers in this area in his chosen specialty of Psychiatry and distinguished himself in positions of leadership in helping establish Alcoholics Anonymous, and

WHEREAS, Dr. Hollis had been a valued member of this Society for forty-eight years.

BE IT THEREFORE RESOLVED:

THAT, this resolution be adopted and entered into the archives of the Society, and

THAT, a copy of this resolution be forwarded to Dr. Hollis' family as an expression of our sincere sympathy, and

THAT, a copy be made available to the Journal of the Arkansas Medical Society for publication.

ADOPTED: Pulaski County Medical Society
Executive Committee

DR. WOODROW E. PHIPPS

WHEREAS, the membership of the Pulaski County Medical Society notes with sincere sorrow the recent tragic death of a most valued member, Woodrow E. Phipps, M.D., and

WHEREAS, he had been an active and interested member of the Society for forty-eight years and had formed many lasting friendships with other members of the Society, and

WHEREAS, he had an enviable record of community service in his hometown of North Little Rock, serving for many years as a member of the school board and as an alderman.

BE IT THEREFORE RESOLVED:

THAT, upon adoption of this resolution it be made a part of the Society's permanent archives, and

THAT, a copy be presented to Dr. Phipps' family as an expression of our heartfelt sympathy, and

THAT, a copy be sent to the Journal of the Arkansas Medical Society for publication.

ADOPTED: Pulaski County Medical Society Executive Committee

DR. CLARK B. PROCTOR

WHEREAS, the membership of the Pulaski County Medical Society is saddened by the recent death of a valued member, Clark B. Proctor, M.D., and

WHEREAS, since joining the Society in 1961, he had been a faithful member, highly respected by his colleagues, and

WHEREAS, he had an enviable record of military service to his country which extended for a period of twenty-seven years and had served on the Veterans Administration staff for a period of twenty years.

BE IT THEREFORE RESOLVED:

THAT, in memory of Dr. Proctor, this resolution be adopted and made a part of the permanent archives of the Society, and

THAT, a copy be forwarded to Dr. Proctor's family to express our deepest sympathy, and

THAT, a copy be made available for publication in the Journal of the Arkansas Medical Society.

ADOPTED: Pulaski County Medical Society Executive Committee

OBITUARY

DR. ALLEN G. TALBOT

Dr. Talbot of Lake Village died August 22, 1985. He was born October 15, 1920, in Thornton.

He was a 1943 graduate of the University of Arkansas at Fayetteville and a 1948 graduate of the University of Arkansas College of Medicine. Dr. Talbot served his internship with the University. He was a resident in Surgery at Arkansas Baptist Hospital from 1949-50. He had practiced medicine in Lake Village since the early fifties. He was a former chief of staff of Chicot Memorial Hospital.

Dr. Talbot was a veteran of World War II and a retired Senior Colonel in the Arkansas Army National Guard. The National Guard Armory in Lake Village was dedicated in his honor. He had received the Arkansas Distinguished Service Medal, Arkansas Service Ribbon, Army Meritorious Medal, and Armed Forces Reserve Medal.

Dr. Talbot was named Lake Village Man of the Year in 1978. He was a member of the Chamber of Commerce, Lions Club and had served as president of the Chicot County Medical Society.

He is survived by four daughters, two stepdaughters and a stepson.

DR. MARION H. WILMOTH

Dr. Wilmoth of Nashville died August 31st. He was born on March 19, 1923, in Oklahoma City.

Dr. Wilmoth was a 1948 graduate of the University of Arkansas at Fayetteville. He was a

veteran of World War II. He was graduated from the University of Arkansas College of Medicine in 1953 and served a General Practice residency at Huey P. Long Charity Hospital in Pineville, Louisiana.

He is survived by his wife, Connie White Wilmoth, a son, daughter, two stepsons, and a stepdaughter.

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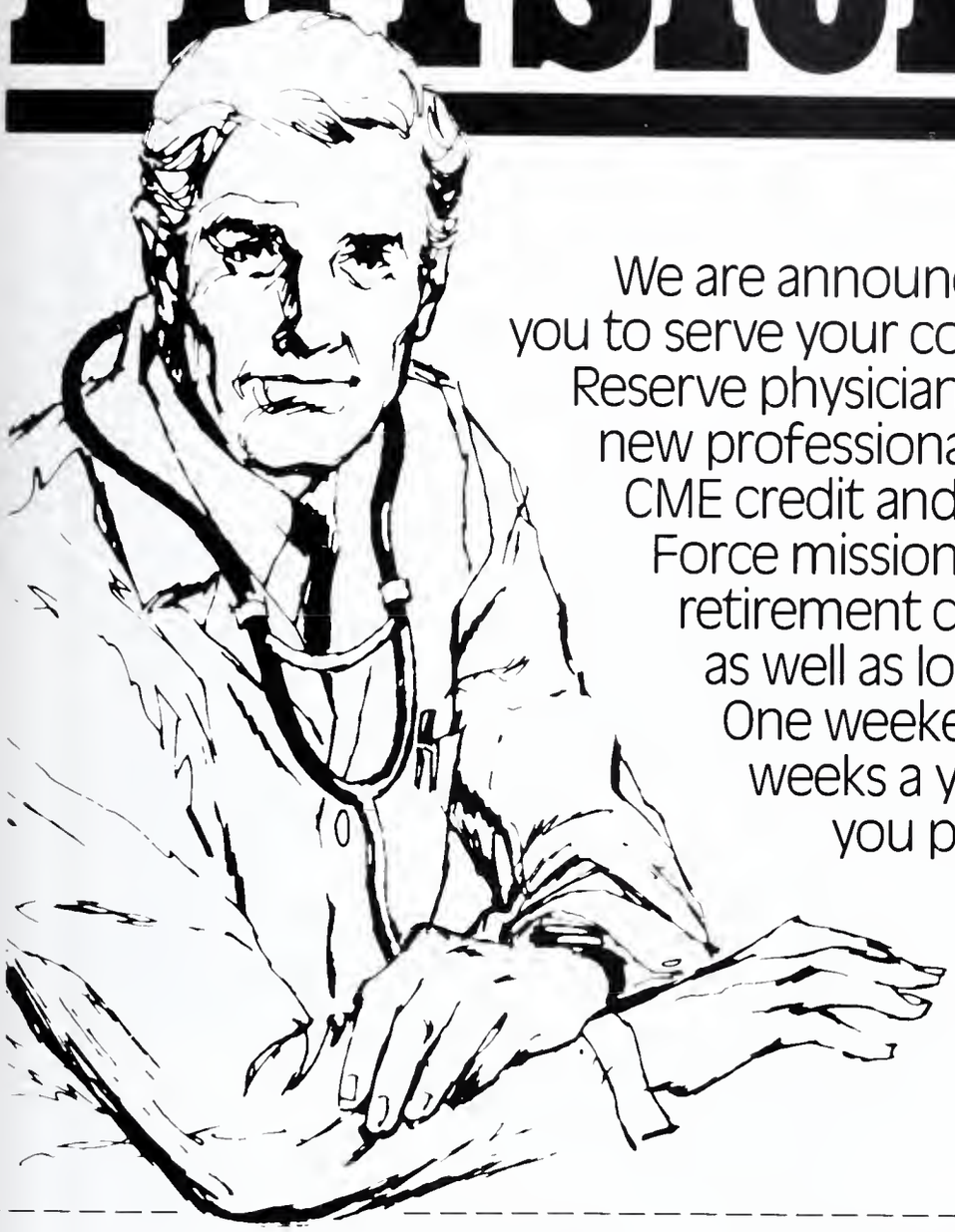


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Brief Summary of Prescribing Information.

Indications and Usage: Management of anxiety disorders or short-term relief of symptoms of anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

Contraindications: Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

Warnings: Not recommended in primary depressive disorders or psychoses. As with all CNS-acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

Physical and Psychological Dependence: Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addiction-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

Precautions: In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown, but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper G.I. disease. Safety and effectiveness in children under 12 years have not been established.

ESSENTIAL LABORATORY TESTS: Some patients have developed leukopenia; some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

CLINICALLY SIGNIFICANT DRUG INTERACTIONS: Benzodiazepines produce CNS depressant effects when administered with such medications as barbiturates or alcohol.

CARCINOGENESIS AND MUTAGENESIS: No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

PREGNANCY: Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chlordiazepoxide, diazepam and meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may be pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

NURSING MOTHERS: It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

Adverse Reactions, if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

Transient amnesia or memory impairment has been reported in association with the use of benzodiazepines.

Overdosage: In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

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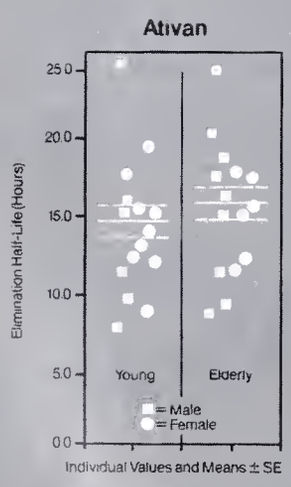
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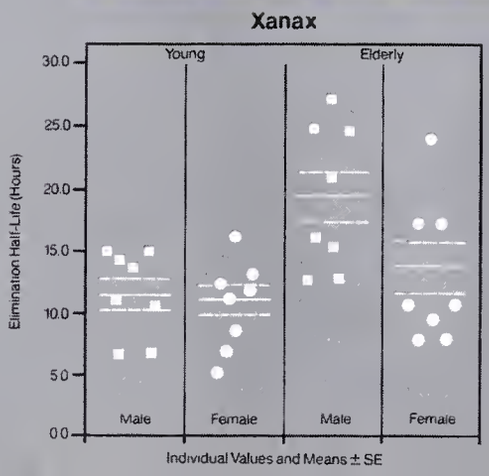
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References:
1. Greenblatt DJ: Clinical study, pharmacokinetics and bioavallability in the elderly, Ativan® (lorazepam). Data on file, Wyeth Laboratories.
2. Greenblatt DJ, Allen MD, Locniskar A, et al: Lorazepam kinetics in the elderly. Clin Pharmacol Ther 26:103, 1979.
3. Greenblatt DJ, Divoll M, Abernethy DR, et al: Alprazolam kinetics in the elderly. Arch Gen Psychiatry 40:287, 1983.

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POCAHONTAS. Opportunities exist for two or three family practitioners in this northeast Arkansas community of 6,000. Trade area population approximately 25,000. One family practitioner retired in March 1985, one is retiring in September 1985, and another retiring later this year. A clinic is now available for a minimal investment for a family practitioner ready to assume a busy practice. Specialists practicing in the community include: two general surgeons, one cardiologist, seven family physicians with part-time coverage by an orthopaedic physician, urologist, and pathologist. The hospital emergency room has coverage each night, weekends and all holidays.

MARIANNA. Population 6,100; trade area population about 20,000. Opportunities exist in family practice, general practice, and internal medicine. Office space is available. Opportunities exist for private practice or to join a government funded clinic on a salaried basis. There is a 25-bed acute care hospital in Marianna.

HOT SPRINGS. Population 36,228. The vacation capital of Arkansas is located 60 miles from Little Rock. Ouachita Memorial Hospital is currently seeking a pathologist. The city has become a health resort due to the 47 hot springs and the abundance of pure mineral water. The area is well known for its horse racing and its beautiful lakes. Ouachita Memorial in Hot Springs is a 155-bed general, acute care facility serving the city and the surrounding counties. It is a full service facility with a comprehensive range of medical/surgical services including a 24 hour emergency department. The hospital has a diverse medical staff with a wide range of specialty services offered. Ancillary services include cardiac catheterization, cardiopulmonary EEG, EKG, nuclear medicine, physical medicine, and ultrasound. In addition, OMH offers a broad spectrum of specialized services including outpatient surgery, hemodialysis and peritoneal dialysis and progressive coronary care. The hospital offers continuing medical education programs for medical staff members.

RUSSELLVILLE. Opportunities are presently available in neurology and pediatrics. Located 75 miles west of Little Rock, Russellville has a service area of around 72,000. The fully accredited hospital has a broad range of services including a 12-bed intensive care unit, nuclear medicine, physical therapy, and many others. Currently over 16 medical specialties are represented by the medical staff. If needed, American Medical International can provide financial assistance to the relocating physician.

PINE BLUFF. The Jefferson Comprehensive Care Center, Inc., in Pine Bluff and its satellite clinics in North Pine Bluff, Altheimer, Redfield, and College Station have salaried positions open in the areas of family practice, general practice, internal medicine, and pediatrics. The well equipped North Pine Bluff Clinic is a 2,440 square foot facility with 8 examination rooms, has a user population of approximately 5,000 and is approximately 5 miles from Jefferson Regional Medical Center. The hours of practice are 40 hours per week with inpatient care, off hours and emergency room coverage. The Altheimer satellite is 14 miles northeast of Pine Bluff and has adequate space for two physicians and includes lab and x-ray facilities. The Redfield satellite is approximately 20 miles south of Prime Center in Pine Bluff. It has offices for two physicians, one nurses station, reception area, x-ray room and laboratory. The College Station satellite is currently undergoing extensive renovation and when completed will have two examining rooms, reception area, x-ray room, physician's office, and laboratory. College Station is a small rural community of 1,425 located just outside the city limits of Little Rock.

BLYTHEVILLE. Blytheville has a population of approximately 25,000 with a trade area population approximately 70,000-100,000. Blytheville is located in northeast Arkansas approximately 60 miles north of Memphis, Tennessee, on Interstate 55. There is a definite need for another pediatrician. Although there are two full-time pediatricians in Blytheville, approximately one-third to one-half of the pediatric care occurs outside the Blytheville area. One of the pediatricians is interested in having a partnership immediately.

MANILA. Opportunities exist in Manila for physicians in the fields of general practice, family practice and/or internal medicine. Manila, population 2,600, is serviced by the Buffalo Island Community Hospital, a 32-bed primary care facility. National Health Care, the owners of the hospital, offers a substantial first year salary, office space at no charge for one year and funds for necessary office personnel. Reasonable moving expenses will be paid. The hospital has on its staff physicians who practice in Leachville, Monette and Caraway, each approximately 10 miles away. Other hospitals are in Jonesboro, approximately 35 miles away, Osceola and Blytheville approximately 18 miles away.

PARAGOULD. Population 15,000; trade area 50,000. Paragould is located in Greene County in northeast Arkansas. Opportunities now exist with Paragould Medical Center and other groups in the following specialties: dermatology, family practice, internal medicine and otorhinolaryngology. The city and county are served by a 129 bed non-profit community operated hospital with full facilities including sonograph, gamma camera, cobalt therapy unit and a CT scanner. The latest hospital expansion in 1980 doubled the floor space of the institution. Paragould currently has approximately 25 physicians.

MENA. Population 5,132; county population 16,984. Mena is 82 miles from Fort Smith and 77 miles from Hot Springs, where most specialties are represented. There is very good opportunity for a practice in Mena. The town presently has four family practitioners, three general practitioners, and one radiologist. The doctors feel there is a desperate need for specialists, i.e., surgeons, internists, obstetricians/gynecologists, orthopaedists, pediatricians, urologists, and family practitioners. There is a new 57-bed, all private rooms, accredited general hospital and two nursing homes with a total bed capacity of 174.

For more information, contact the Physician Placement Service, Arkansas Medical Society, Post Office Box 1208, Fort Smith, Arkansas 72902.

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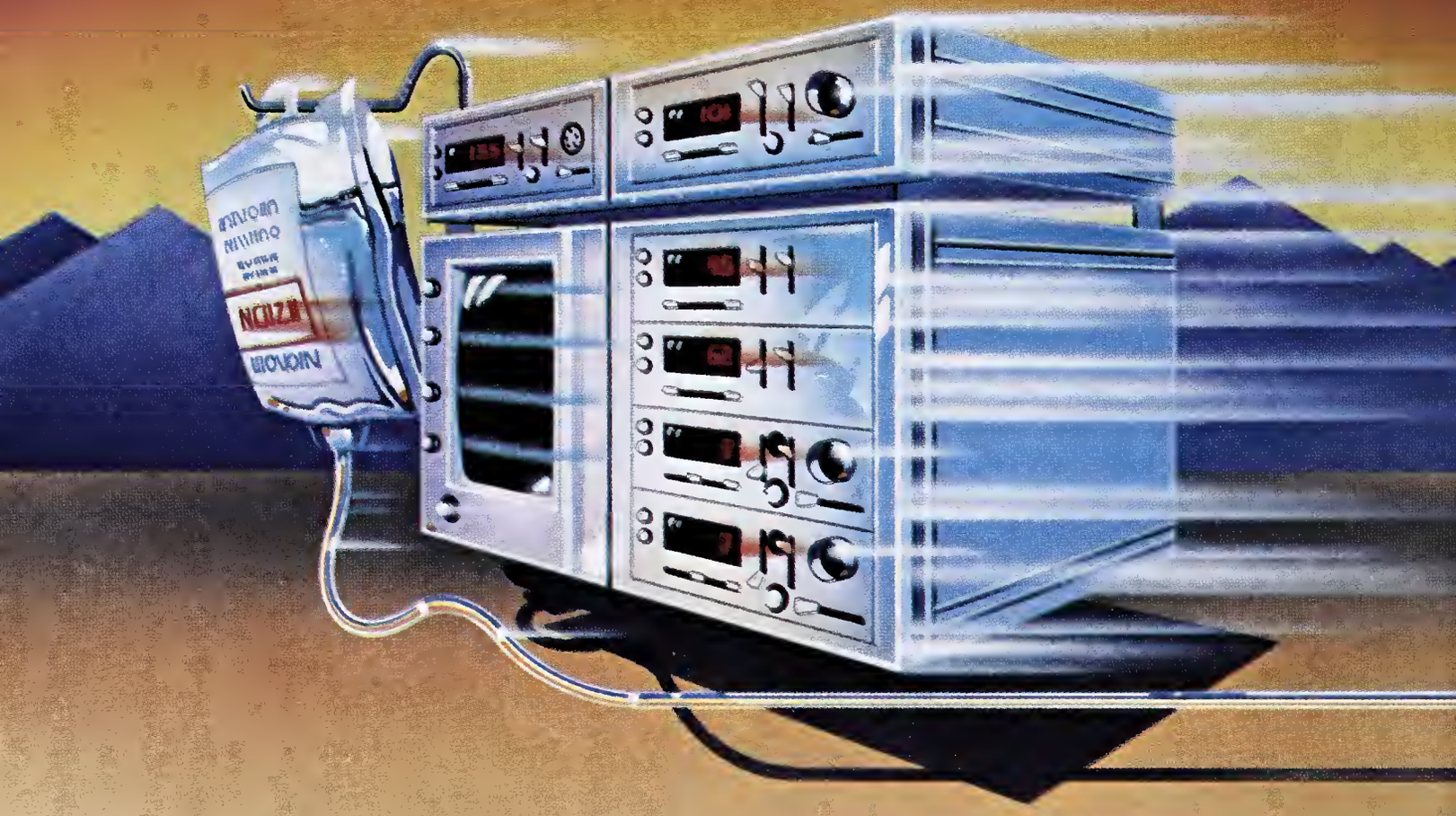
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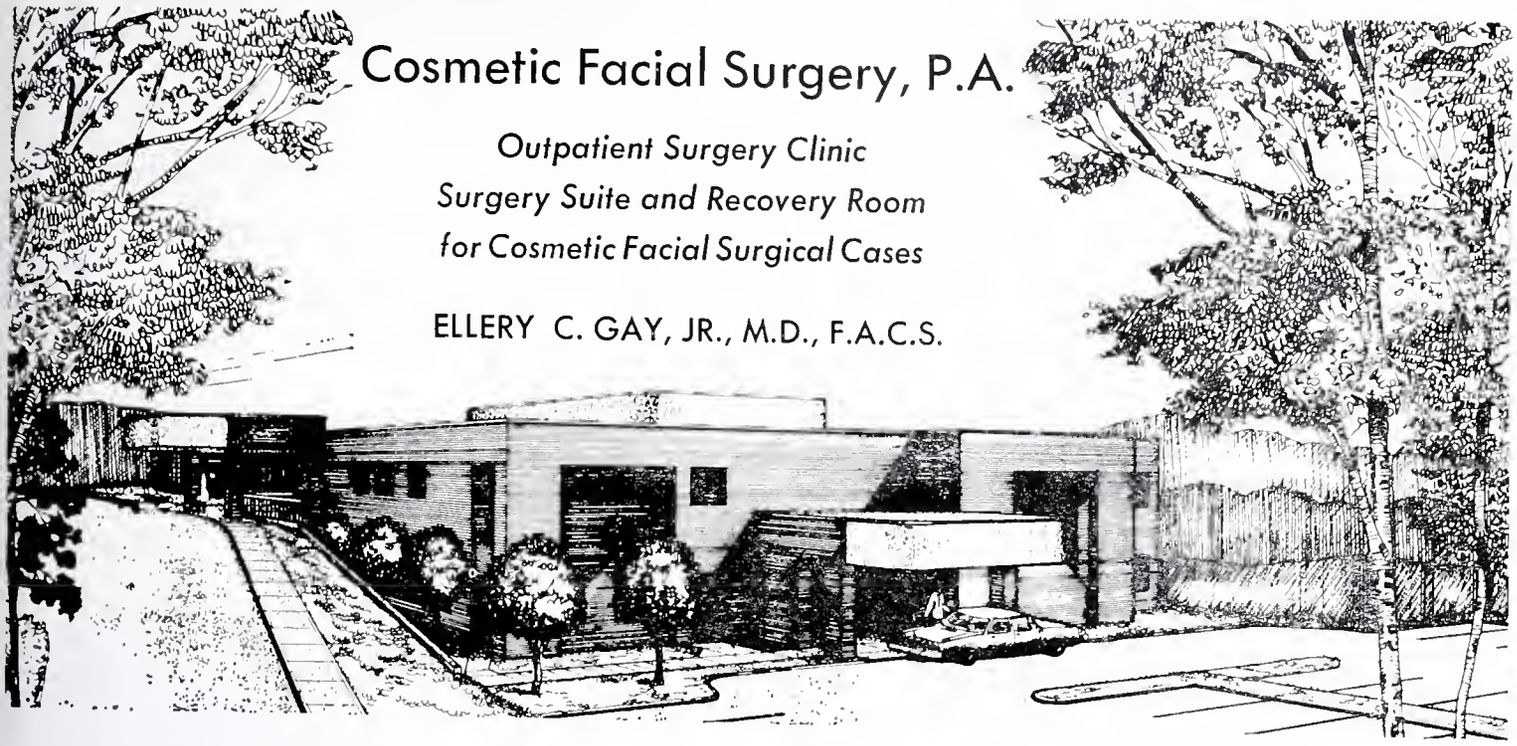
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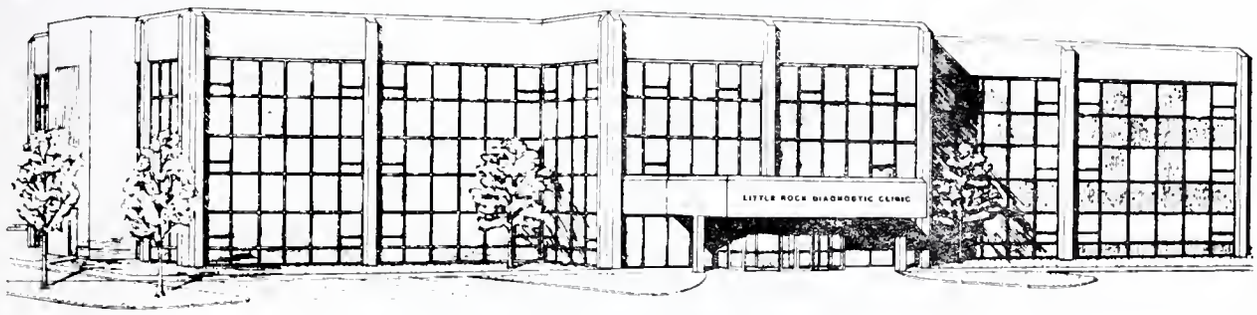
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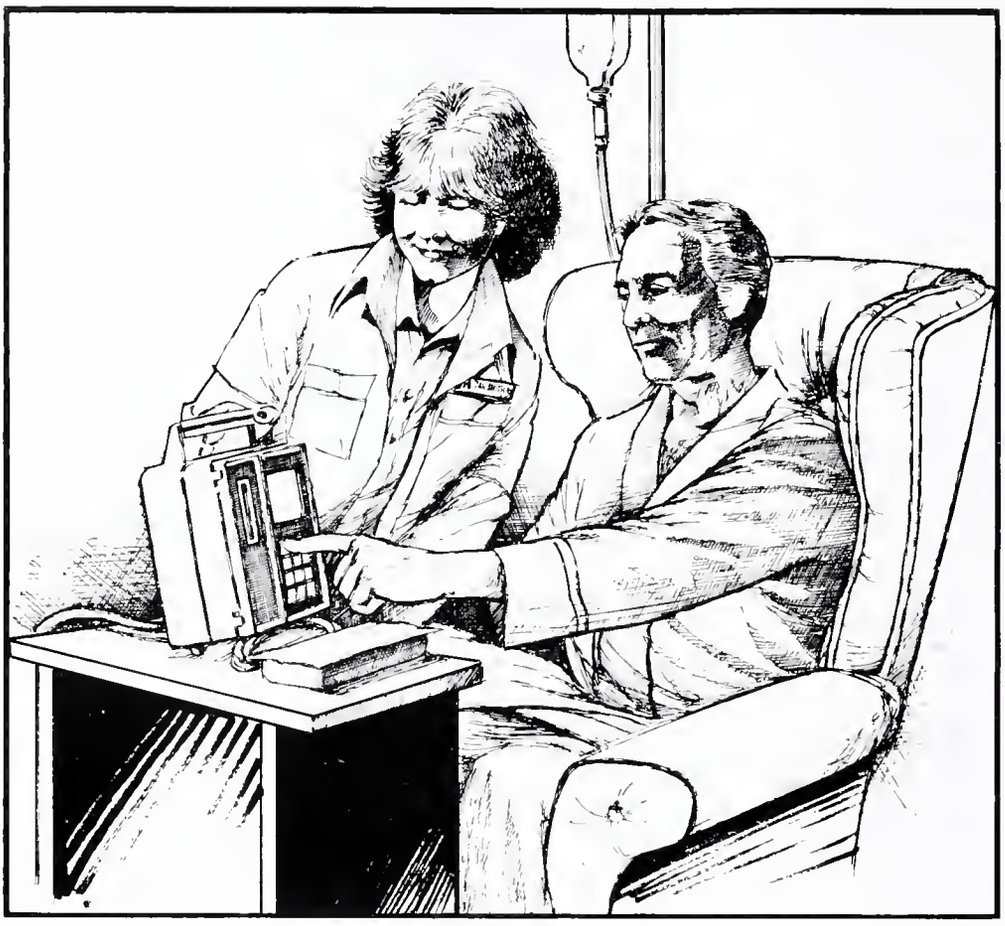
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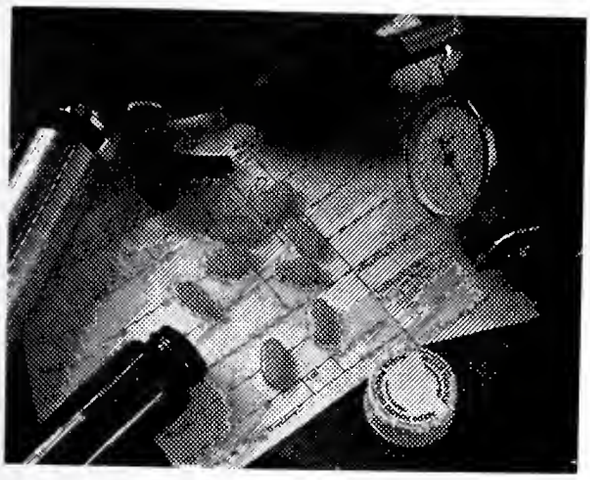
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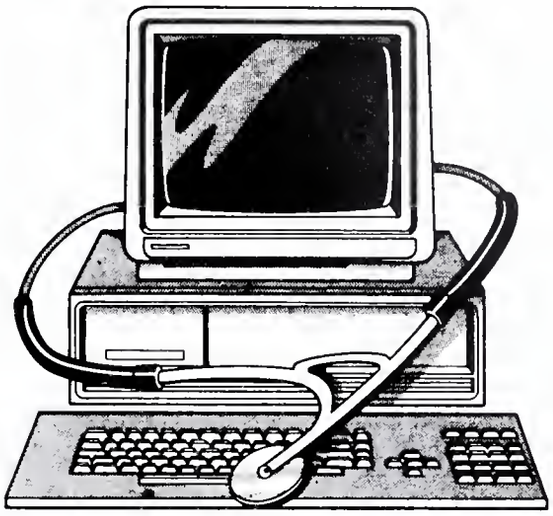
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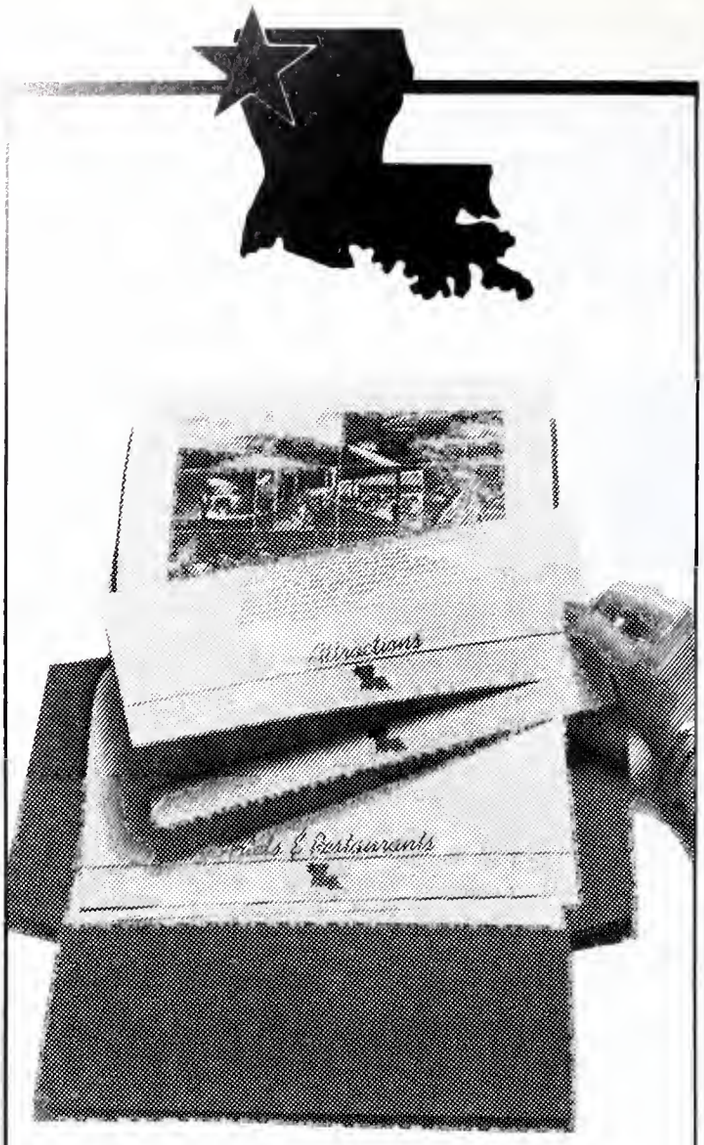
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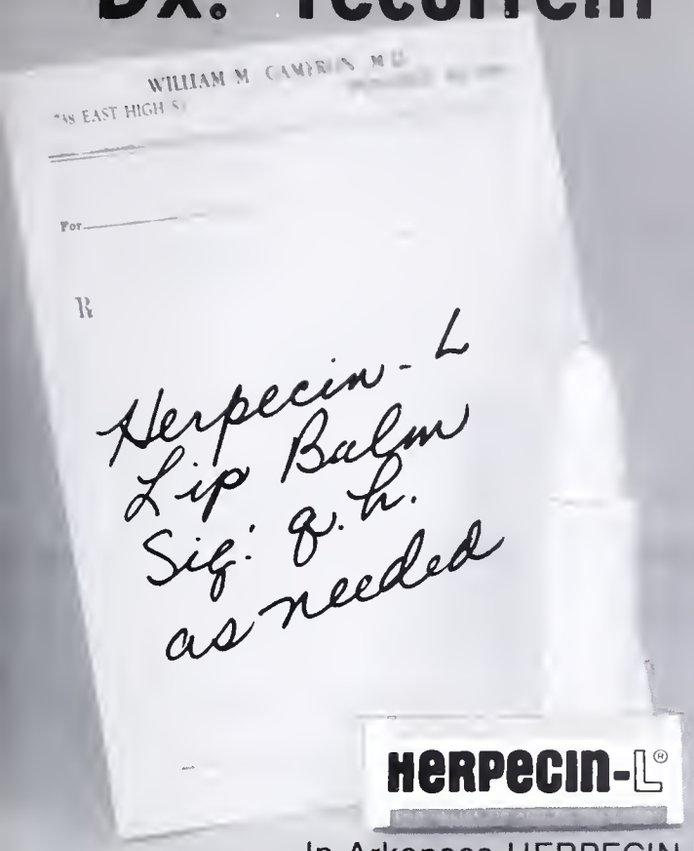
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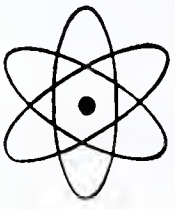
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CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL®):
Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide:
Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL®):
CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned, the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patients should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide:
Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL®):
GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide:
GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS: Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL®):
Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia, congestive heart failure, intensification of AV block, hypotension, paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:
Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System: Dizziness, vertigo, paresthesias, headache, xanthopsia.

Hematologic: Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura, photosensitivity, rash, urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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Torsion of the Spermatic Cord — Management Update

Ralph A. Downs, M.D.*

INTRODUCTION

Torsion of the spermatic cord is the most common surgical emergency involving the testicle, and the need for immediate treatment is generally understood; yet when the proper criterion for success is employed, the testicular salvage rate is inordinately low. The requirement for success is an unatrophied testicle and a fertile patient after long-term follow-up.[1,2] This, along with the recent work that has projected atrophy as a detriment to the spermatogenic activity of the contralateral testicle, makes a reevaluation of our present day management of torsion doubly important.[3,4,5]

Pertinent Historic Data

Animal experimentation correlated with clinical studies has led to a better understanding of torsion. Smith's[6] classic experiment with dogs in 1952 demonstrated that ligation of the spermatic cord destroyed spermatogenic cells in the testis in six hours and Leydid cells in ten hours. The effects of torsion on the human testis parellel these results.

Krarup,[1] evaluating the long-term follow-up of patients after detorsion, found a 65% incidence of atrophy of the ipsilateral testicle; and that 18 out of 19 patients who underwent postoperative evaluations had abnormal sperm counts.

Barsch, et al.,[2] in a similar study of long-term follow-up, found that the majority of patients who endured a torsion time of over eight hours ended up with atrophy of the testicle. Likewise, he noted that 12 out of 30 patients studied from a fertility standpoint had an abnormal sperm analysis. He also observed that 3 patients who were treated by orchiectomy subsequently had normal sperm analysis.

Lipshultz, et al.,[7] in an evaluation of adults who, as children, had undergone orchiopexies for the treatment of unilateral cryptorchidism, found similar results regarding atrophy and infertility.

Nagler and White,[3] stimulated by the above studies, proved by the use of rat models that testicular infarction caused cellular damage and aspermatogenesis in the contralateral testicle. Furthermore, this adverse effect could be blocked by orchiectomy or by immunosuppression with the use of anti-rat lymphocytic globulin (ALG) and splenectomy, thus producing strong evidence that the infarcted testicle causes an immune mediated damage to the opposite testicle which, in turn, is capable of producing infertility.

Very recently Kogan[4] and Cosentino, et al.,[5] in separate experimental studies with rats, came to the same conclusions, which substantiated those of Nagler.

Clinical Presentation

Pain is by far the most predominant symptom in torsion; but its severity, onset, and location vary. Chapman and Walton[8] found the incidence of acute, sudden pain with torsion to be only 50%. A few patients may give a history of prodromal, intermittent pain prior to the acute episode. The Prehn[9] test, which has survived the literature for fifty years, is undependable and at times misleading.

Conclusive findings by palpation are rare because of the massive edema. The twist in the spermatic cord and the malrotated testicular components are seldom palpable. The most common finding is a markedly engorged, bluish discolored, nonfluctuant hemiscrotum containing a high riding testicle. The opposite testicle should be examined for hypermobility manifested by a "lateral lie" of its longitudinal axis.

The fact that torsion occurs predominantly in young males is the most important key leading to the diagnosis. Actually, the clinical features of torsion do not conform to any definite clinical pattern and cannot, consequently, be relied on heavily. These variables in clinical findings are the main reason for misdiagnosis.

*Department of Surgery, St. Vincent Infirmary, Little Rock, Arkansas.

Management

One should have a direct and aggressive approach in the management of torsion. The clinical diagnosis must be assumed and surgery expedited in any young patient with a unilaterally painful, swollen testicle who has no history of previous genitourinary problems or evidence of the existence of other diseases. Confirmation of the diagnosis should be made at the time of surgery. This time span between the initial medical examination and detorsion is critical. Taking time for auxilliary testing such as nuclear scanning, the use of the Doppler stethoscope, or other modalities are redundant and not recommended unless other conditions are suspect.

Every case of torsion should be treated as an emergency, no matter what torsion time with which the patient presents. A short torsion time should not convey any sense of complacency to the attending surgeon nor should a torsion time of over twenty hours change the necessity for immediate surgery.

Surgical procedures employed in the treatment of torsion are twofold: Bilateral orchiopexy when a viable ipsilateral testicle is found; or orchiectomy and contralateral orchiopexy when a nonviable testicle is found. Manual detorsion should be tried but abandoned if not immediately successful. Even if this manipulation is accomplished, one should proceed immediately with surgical exploration.

Differential Diagnosis

The conditions to consider in the differential diagnosis of torsion are listed in Table I.

The testicular scan is at least 94% efficient in differentiating torsion from inflammatory diseases.[11] Figure 1 is classic, revealing a cold center surrounded by a hyperemic rim. False positive results are rare but may result from overlying epididymo-orchitis with abscess, testicular tumors with central necrosis, scrotal hernias, or extremely tense hydroceles. The usefulness of scans in babies with tiny testicles is limited and ordinarily will give false negative results.

Vasculitis of the testicle occurs in 15% to 30% of boys with Henoch-Schonlein syndrome.[12] Typically, a purpuric rash precedes the testicular involvement.

A small percentage of testicular tumors will invade the underlying tunica vaginalis and will initially present as an "acute testicle". A misdiagnosis here usually leads to a situation of disastrous proportions for all involved. Testicular ultrasound is the best test for the demonstration of intratesticular mass lesions.

TABLE I

1. Epididymo-orchitis
2. Acute hydrocele secondary to inflammatory disease
3. Mumps orchitis
4. Trauma—hematocele
5. Torsion of testicular appendages
6. Invasive testicular carcinoma
7. Henoch-Schonlein syndrome

Discussion

Detorsion has yielded overall poor results in regards to testicular salvage and the preservation of fertility.[1,2] The primary cause of failure is excessive torsion time, due either to the patient's not seeking medical attention in time or to tentativeness and a tendency to "overdiagnose" on the part of the attending physician. Surprisingly, Ransler and Allen[10] found as recently as 1982 in a large series of cases that 52% of those testicles lost were the direct result of misdiagnosis on the part of the physician making the initial contact with the patient.

Animal experimentation, on the one hand, has thrown considerable light on the subject of torsion; but, on the other, it has cast a cloud of doubt over its present day management. Nagler's[3] work, recently corroborated by others,[4,5] has proven that the ischemic ipsilateral testicle following torsion

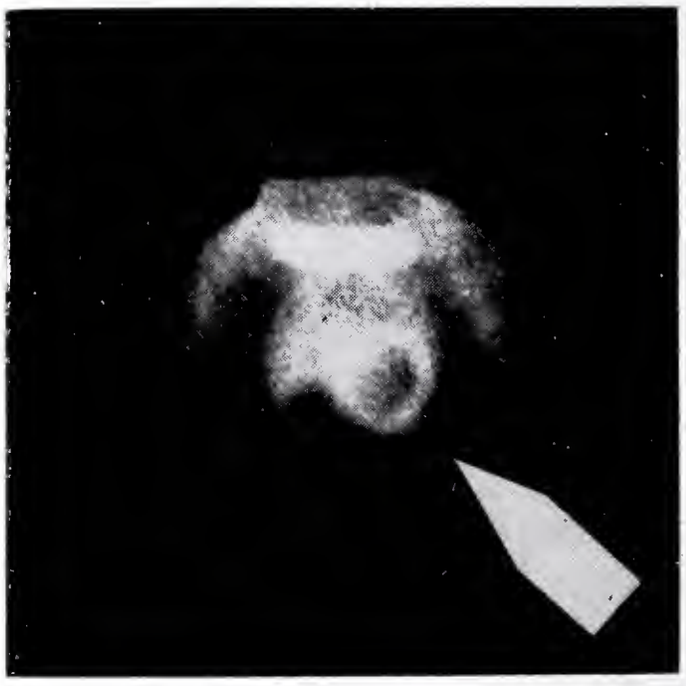


Figure 1.

Testicular nuclear scan. Ischemic testicle in center haloed by hyperemic scrotum.

will produce histological damage and abnormal spermatogenesis in the contralateral testicle by way of an immune mediated mechanism. Cosentino[5] has shown that irreversible damage can be demonstrated in the ipsilateral testicle after just one hour of experimental torsion; similar deleterious changes occur in the contralateral testicle after three hours. Conversely, these abnormal changes were negated by detorsion within three hours or by orchiectomy within five hours.

These experimental studies are significant in that they explain the mechanism by which infertility occurs in unilateral testicular disease such as torsion and cryptorchidism. These tests at least make it obvious that more emphasis must be placed on expediting surgical exploration; that the surgical bias of leaving in testicles of questionable viability will be reversed in favor of immediate orchiectomy; and that emergency orchiectomy should be carried out in cases of "old torsion" that have infarcted. At most, these animal experimentation provoke the following questions: Is it possible to significantly increase testicular salvage by persisting with detorsion as a form of treatment? If not, will orchiectomy and the administration of immunosuppressive medications become the treatment of choice? Well controlled, long-term follow-up and fertility evaluations of the posttorsion patients will provide the answers.

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The Role of the Primary Care Physician in Eye Care

James D. Reynolds, M.D., Mary Wackerhagen, C.O., and Gissur Petursson, M.D.*

INTRODUCTION

In an idealized medical environment, all individuals could easily and inexpensively acquire a professional eye exam by an ophthalmologist on a regular basis. Obviously, this is not possible. Shear numbers of patients, ophthalmologists, and attention to cost effectiveness prevent this ideal circumstance. Primary care physicians are very important to fill this gap in insuring every person possible is provided with minimum standards of eye care.

Actual and potential eye disease involves a multitude of possible problems. Unfortunately, many of these disorders are asymptomatic. It might be assumed that most people with symptomatic eye disease will seek professional eye care from a physician or other eye care professional. It is the large group of patients with insidious asymptomatic eye disease in which primary physician eye care is so important.

In order to grasp the magnitude of the problem, a few epidemiologic statistics are useful. For the child, it is estimated that the majority of learning in the first years of life is through the visual system. Approximately 25% of school age children have some form of vision problem with approximately 20% wearing glasses. In the very important pre-school population, one in every twenty children has some form of eye disorder. (1) The most frequent cause of non-refractive decreased vision in the age group under six years of age is amblyopia or "lazy eye". Amblyopia is an actual organic damage in the occipital cortex and lateral geniculate bodies caused by a disuse or non-use of an eye without true organic damage. The disuse arises from any disorder that prevents a clear formed image from projecting onto a healthy macula or our "20/20" retina. Strabismus, corneal opacities, cataracts or anisometropia, an insidious imbalance in refractive error, can be associated with amblyopia. This disorder is very treatable in young children, but irreversible after age eight to ten, possibly age six. Between 1% and 4% of our children have this problem. Most children are not sophisticated enough to recognize poor vision in a single eye and hence will never complain of amblyopia. In fact, even when both eyes are blurred due to something as benign as a refractive error, many children will not complain. It is true that some children even approach their teen years without ever having seen things clearly, and never realizing this was not normal. It is estimated that as many as five million Americans presently suffer from nonreversible amblyopia that could have successfully been treated by early diagnosis.[1] To bring these statistics home, Arkansas has 120,000 school age children with eye or visual problems of some degree. The Arkansas pre-school ages of three to five may include 5,500 children with detectable eye problems.[2]

Screening programs and primary care physicians offer a great opportunity to identify these potential victims of debilitating eye diseases early. This early detection and referral can significantly reduce eye disease morbidity. Although the definition of primary care physician is variable, it certainly includes internists, family practitioners and pediatricians. Screening agencies include such diverse organizations as the State Health Department, the National Society to Prevent Blindness, public and parochial schools, industrial programs, volunteer groups in churches, community centers, clubs and others. These groups have access to two very different subpopulations of patients, the adult and the child.

Some of the eye diseases in children that can be detected by screening by primary practitioners are amblyopia, strabismus, nasolacrimal duct or tear draining problems, ptosis or drooping of the lids, corneal opacification, surface tumors of the eyes and lids, and diseases that cause an absent red reflex or inability to view the fundus such as cataract, bleeding or retinal disorders. It should be emphasized that after three to four months of age none of these problems will resolve without treatment. The child will not "grow out" of lacrimal stenosis, amblyopia or strabismus. Early treatment is essential to improve cure rates.

The goals of screening by primary care physicians or volunteer agencies is to provide minimal standards that would identify the individual with possible eye disease, including those patients in certain high risk categories, followed by appropriate ophthalmologic referral for examinations, possible treatment, and proper rehabilitative care. This may involve referral to various social and

*Department of Ophthalmology, University of Arkansas and Arkansas Children's Hospital, Little Rock, Arkansas.
Supported in part by the National Society to Prevent Blindness.
Request Reprints: James D. Reynolds, M.D., Department of Ophthalmology, Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Arkansas 72202.

governmental agencies equipped for this problem.

With these goals in mind, what constitutes an adequate or minimal screening exam? This depends in part on what person or persons is performing the screening. A primary care physician should be able to perform a simple but thorough examination that will pick up the bulk of eye problems in three to five minutes after a little practice. If one utilizes assistants in the office, it is possible to cut physician time down even more. (Tables I and II) Screening of children could be performed in the neonatal period soon after birth, at age six months, at age two or three years and, after school age is reached, probably yearly.

The most important parameter to determine in the child is visual acuity.[3] This is performed in the school aged child with a simple Snellen Eye Chart. It is recorded as 20/20, 20/40, 20/100 etc. For the child that is not yet facile with the alphabet, there are several eye charts appropriate such as the illiterate "E" or "Landolt Rings". These are most useful for four- and five-year-olds, although some very bright three-year-olds are able to perform this test. Two- and three-year-olds are most easily tested with picture cards. The author personally uses Allen cards, a picture of a house, a car, a horse, and others in very recognizable fashion aimed at this age group. The child is first asked to identify the closely held cards with both eyes opened. Once it is clear that he recognizes what the pictures are, then each eye is tested separately by slowly backing away from the child and asking him to continue to identify the pictures. If he can identify the pictures at twenty feet, he certainly has normal acuity. What is more important in this age group is assuring symmetrical visual acuity. Some children are not cooperative enough to continue to be interested when the task gets difficult at twenty feet and will tire at ten feet. Lack of cooperation verses actual visual loss is assumed on the basis of symmetry of response from one eye to the other. Children who are younger than age three usually will have to have objective methods of assessment that do not depend on the child's response. The most useful method is simply assessing the fixation reflex. This develops in the child at three months of age and is well developed at age four months, when it is associated with grasping for the object of regard. The physician can hold some familiar, playful or colorful object in front of his face, and checking each eye, move the object around, and simply watch if the child follows the object and his face smoothly and with interest. Again, symmetry is very important rather than an absolute criterion for each eye. All but the fixation reflex can easily be done by an assistant in the office. Once visual acuity is assured, the rest of the exam can be performed in about one minute.

Looking at the child from a distance will tell you if he has a droopy lid, or has crusty eye lashes or frequent tearing that could indicate a nasolacrimal duct problem. Excessive photophobia, along with tearing, in an infant could also indicate the presence of glaucoma. A penlite will illuminate the cornea and show it to have a normal luster or possible some abnormal corneal opacity. The pupils can be checked for brisk reactivity, and the pupillary light reflex can be checked for centering in both pupils simultaneously. A light reflex that is off-center in one of the pupils is evidence that a strabismus may be present. For those pediatricians who feel comfortable with a slightly more complex test, further motility testing can be done. An ophthalmoscopic exam with a direct hand-held ophthalmoscope is also easily conducted in a child. It is not easy to find the optic nerve and macula and check retinal detail, but it is relatively easy to shine this light into the child's eye from a distance of one or two feet and achieve a red reflex. The zero or the black one, two or three numbers should be dialed on the ophthalmoscope for maximum sensitivity of this screening test. An absent or shadowed red reflex would indicate a problem such as a cataract. Again it should be stressed how straight forward the simple screening techniques are for the pediatrician to perform on all children.

Adult screening is, of course, very different. Actual visual acuity testing can be performed using a Snellen Eye Chart, but many older patients already have cataracts and are followed by ophthalmologists and this may not be as productive as it is in children. Chronic simple glaucoma is a most insidious, quiet, sight threatening disease of middle and old age, affecting up to 2% of the population over age 40. Indeed, by age 80, that incidence is closer to 15%. The role of the primary care physician in glaucoma discovery is most important and involves measuring the intraocular pressure and/or observing the suspiciously large cupping of the disc, by simple direct ophthalmoscopy. It is surprising how often unilateral gradual

indolent loss of vision such as caused by cataract and glaucoma goes totally unnoticed by the elderly senile patient. Pressure measurement can be done routinely by an office assistant in all adults over 35 to 40 years of age. Other important screening exams performed by direct ophthalmoscopy include looking for anything that would impede a view of the fundus, such as cataract or hemorrhage, and retinal detail such as blood vessels and optic nerveheads, and the typical changes of diabetes and hypertension. Undoubtedly, many internists consider this a requirement for their care of patients with high blood pressure or diabetes mellitus.

It should be clear how efficient, quick and simple it can be for primary care physicians to take advantage of the great opportunity for eye screening in their patient populations. Many patients can be entered into the ophthalmologic system by this method that would otherwise go undetected and untreated. Certainly visual loss and poor visual performance puts a huge stress on the individual and society, and we would encourage primary care physicians to become more aware of the useful and truly critical role they can play.

TABLE I

BASIC PEDIATRIC EYE EXAM

Vision = Fixation, Allen cards, "E" game, Snellen
External = Lids, cornea, iris, pupils by flashlight
Motility = Light reflex, cover testing, versions or gazes
Ophthalmoscopy = Red reflex, optic nerve, retina

TABLE II

AGE VS. PEDIATRIC EYE EXAM

Age	Screening
Newborn	External, Red Reflex
Six months	Visual Fixation, Strabismus, Tear Duct, External, Red Reflex
Two-three Years	Visual Acuity, routine

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The Hickman Catheter — Comparison of Percutaneous and Cutdown Technique

J. Michael Stair, M.D., and Jack D. Alston, M.D.*

INTRODUCTION

Increased use of long-term parenteral nutrition and antibiotics and depleted venous access in the cancer patient receiving chemotherapy have increased the need for long-term venous access. Ideal access should be easy to place and remove. It should also be safe, comfortable, cost-effective, allow for blood withdrawal and last for its intended period of use. Broviac and associates in the early 1970's developed an indwelling right atrial catheter made of silicone rubber for long-term nutritional support.[1] Development of the Hickman catheter with a 60% greater diameter than the Broviac catheter has allowed blood samples to be obtained from the catheter.[2]

Catheters were initially placed into the cephalic or internal jugular vein utilizing a cut-down technique.[3] However, refinement in technique has allowed percutaneous placement, usually in the subclavian vein. This method of placement shortens operative time and decreases cost and patient discomfort.[4,5] We herein report our experience with the Hickman right atrial catheter.

MATERIALS AND METHODS

Hickman catheters were placed in 49 patients in the Little Rock VA Medical Center from July, 1982 to July, 1984. All patients were male veterans. The indication for catheter placement was for administration of total parental nutrition (TPN) in 20 (41%), chemotherapy in 18 (37%) and antibiotics in 11 (22%). Charts were reviewed regarding site and reason for placement, operative time and technique, complications, length of time in place and patient acceptance. Follow-up is complete in all cases.

TECHNIQUE

For percutaneous placement, the patient is placed in slight Trendelenberg position on the operating table and is prepped and draped in a sterile manner. The area from the mandible to below the nipples bilaterally and between each acromion is exposed in case one side is not suitable or venous cutdown over the cephalic or jugular veins is necessary. Lidocaine 0.5% with epinephrine is infiltrated in the subclavian area below the midpoint of the clavicle. A standard 14 gauge needle is placed into the subclavian vein and a 16 gauge subclavian catheter which has been previously bent in a gentle curve is then placed into the needle. The patient is instructed to turn his head toward the operator and the catheter is placed into the vein and the needle is retracted to skin level. By curving the catheter and turning the head of the patient, the catheter will nearly always travel into the superior vena cava.

The guide wire is then placed into the 16 gauge catheter and the catheter is then removed. Once the wire is in position, the area for the subcutaneous tunnel can be anesthesized. It is important not to make a tunnel for the catheter prior to placing the wire because access may be impossible in the position tried initially. The tunnel is created with a Poole abdominal suction tip and the catheter is brought through this tunnel after suture fixation of the catheter to the suction tip. It is then measured to the level of the third intercostal space and cut.

The Cook peel-away introducer is then placed over the guide wire, the dilator removed and the catheter placed into the introducer. The introducer is peeled from the patient leaving the catheter in place. The catheter is flushed with weak heparin solution to insure patency and a standard chest roentgenogram is obtained to confirm proper position. Wounds are then closed and covered with a dressing.

For placement by cutdown, the deltopectoral groove is dissected and the cephalic vein is isolated between silk ties. The tunneling and measuring techniques are as described for percutaneous placement. The catheter is placed through a venotomy and secured. The wounds are closed after confirmation of proper position.

RESULTS

Catheters were placed for the administration for chemotherapy in 18 patients (37%), antibiotics in 11 patients (22%) and total parenteral nutrition (TPN) in 20 patients (41%). Percutaneous technique was used in 39 patients (79.6%) and in

*From the Department of Surgery, John L. McClellan Memorial Veterans Hospital and University of Arkansas for Medical Sciences, 4300 W. 7th, Little Rock, Arkansas 72205. Phone (501) 660-2038.
Address Reprints to Dr. Stair.

all the subclavian vein was used. Cutdown technique was used in 10 patients (20.4%), six patients received TPN and 4 patients received chemotherapy. The cephalic vein was used for 80% of cutdown placements, and the remainder were placed into the internal jugular or saphenous vein. Table 1 shows the indication for catheter placement.

TABLE 1

	Cutdown	Percutaneous	Total
Number	10	39	49
Indication for Placement			
Chemo	4	14	18
TPN	6	14	20
Antibiotics		11	11

There were no complications of placement such as pneumothorax. The average time required for placement by the cutdown method was 80 minutes vs. 37.5 minutes for placement by percutaneous technique. Placement by percutaneous technique was generally better tolerated by the patients largely due to shorter operative time. The catheters remained in place an average of 82 days in all patients, 62 days for percutaneously placed catheters vs. 99 days for those placed by cutdown, for a total of 4,018 patient days (Table 2). For patients receiving chemotherapy, the catheter remained in place for an average of 138 days. The catheter was in place for 35 and 54 days, respectively, for patients receiving TPN and antibiotics.

TABLE 2

	Length of Time For Placement (Avg., In Min.)	Days In Place (Avg.)
Cutdown	80	99.6
Percutaneous	37.5	61.7
Chemotherapy		138
TPN		35
Antibiotics		54

There were three late complications requiring catheter removal. One irreparable catheter leak after 94 days in place necessitated catheter removal in one patient who died a few days later of metastatic cancer to the liver. Two patients had catheter removal during work-up for fever. One patient proved to have antibiotic associated colitis and the other patient had a urinary tract infection. In each instance the catheter tip was sterile. There were no cases of documented catheter infection.

There were 25 patients who died while the Hickman catheter was in place, all from their primary disease. Fifteen of the 18 patients who had catheters placed for chemotherapy died of cancer during therapy: four of acute myelogenous leukemia, one each of cancer of the stomach, pancreas, 4 colon and 2 testicle, one of teratocarcinoma and 2 lymphoma. Three of these patients had cutdown placement and the remainder had percutaneous placement. Nine of 20 patients who received TPN died of their primary disease, one patient each with encephalopathy, heart disease (cardiac cachexia), pelvic abscess, pancreatic abscess, esophageal perforation, cholangitis, diarrhea and 2 with multisystem organ failure. Only one of the 11 patients receiving antibiotics died. This patient had a Hickman catheter placed for the administration of amphotericin B for *Candida* sepsis to which he succumbed. In all other patients, catheters were removed when therapy was completed.

DISCUSSION

The Broviac and Hickman catheters were originally designed for delivery of long-term total parenteral nutrition.[1,6] Use of these catheters has expanded to encompass many diverse groups of patients requiring long-term venous access, e.g., children with cystic fibrosis,[7] cancer patients requiring chemotherapy,[8,9] and patients requiring long-term antibiotics.[7,10] Percutaneous placement, the soft texture of the catheter, and the ability to flush and cap the catheter so as not to require continuous infusion add considerably to patient comfort and acceptance of the Hickman catheter. No patient in our series requested removal. Chemotherapy patients in particular enjoy routine blood samples being withdrawn from the catheter.

The most common long-term complications in Hickman catheters have been infection and thrombosis.[10-13] Neither complication was noted in this series. Infection rates as high as 10% have been reported.[1,12] Patients with malignancies, particularly leukemia, seem most predisposed to catheter sepsis. Sepsis was not a problem among our cancer patients. In fact, our cancer patients retained the use of the catheter for longer than therapy required in the cancer patient. Most of the patients who received TPN and antibiotics required therapy for only 4-7 weeks.

Patient acceptance of the Hickman catheter is great as is patient comfort. Our method of per-

cutaneous placement reduces operating room time and is therefore cost effective. We feel that the Hickman catheter is safe, durable and useful for almost any long-term venous access problem.

SUMMARY

Presented is our experience with Hickman catheters for the delivery of total parenteral nutrition, antibiotics and chemotherapy. Percutaneous placement was easily accomplished and had high patient acceptance. There were no complications of placement or catheter infections. We recommend the Hickman catheter for venous access problems.

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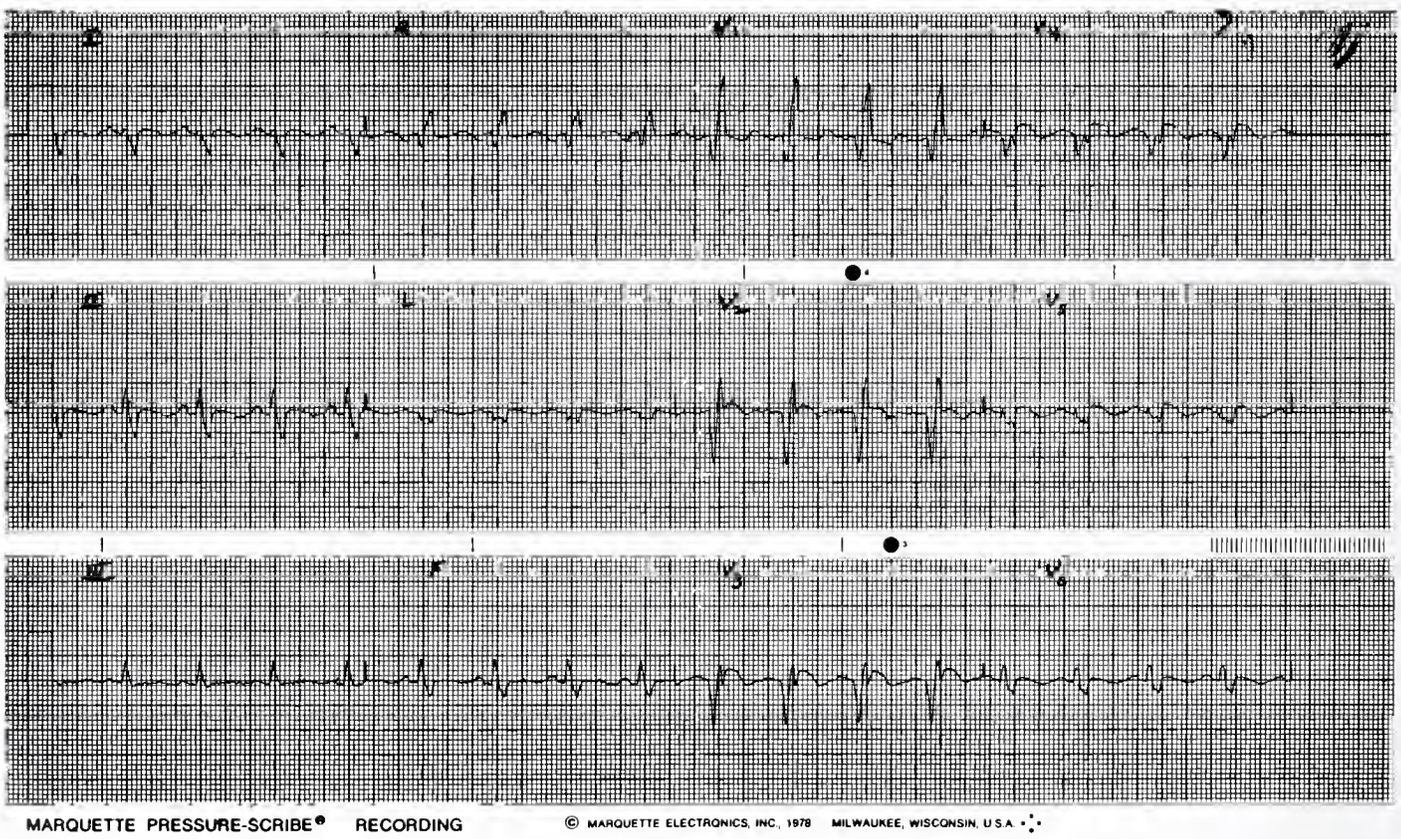
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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 269)

HISTORY: G. W. is a 37-year-old man who presented to his local emergency room because of chest pain. His past history was positive for both smoking and hypertension. A previous electrocardiogram was normal. What do you think of his present trace?



J. Lynn Davis, M.D., and John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

Lead Poisoning

I. Leighton Millard, M.D.*

Since elementary school days when I sat through the Saturday Matinee double feature Westerns (sometimes twice), I have looked for the hero's curse "lead poisoning". I do not mean the normal case of contaminated water or wine from lead pipes or the child who has been eating lead-based paint. I refer to the dreaded villain's bullet that must be removed with a bowie knife heated in the campfire with whiskey for anesthesia.

We all know that in real life bullets or lead slugs do not produce lead poisoning! This is just a slang term for getting killed by a gunshot wound. But is it? I have long wondered and watched in hopes of finding just such a case where a lead slug did indeed produce lead poisoning in the classical sense.

I have found eight reports of lead intoxication from retained bullets in the modern literature.[1-8] I do not pretend to have reviewed all of the orthopedic literature, so there may be many other examples.

There appears little doubt that the bathing of lead bullets in synovial fluid from either joint or bursa can produce elevated levels of serum lead and the clinical syndrome of lead intoxication. This is of insidious onset, sometimes showing up as much as seventeen years after the intital injury.[1-8]

Secondly, lead intoxication from a retained lead slug may show only intermittent symptoms and these usually are seen when some other body stress causes the bone marrow to release extra lead into the circulation. This appears to be the sequence in my case report. Not only were symptoms delayed but subsided without treatment and I have not been able to get the patient to seek definitive care for this problem.

The definitive treatment would be chelating agents and surgical removal of the lead fragments. Unfortunately serum lead levels were not tested on the synovial fluid from the arthrogram because I did not at that time suspect lead intoxication. A brief case report follows.

J. L. R.: A 37-year-old black male, seen first on December 26, 1981, after having been shot (small caliber, low velocity) in the left hip as his place of business was being robbed. The exam and x-rays showed one wound of entrance with the metallic foreign body imbedded in the femoral head. There were no signs of neurovascular damage. He was treated with rest, pain medications and IV antibiotics. The history and x-rays showed a previous retained bullet just superior to the acetabulum of the left hip from a previous robbery attempt. The patient recovered well from the December gunshot wound and returned to work, but in February 1982 had further symptoms of left hip pain and headaches and left upper and lower extremity weakness. He was hospitalized and seen by a neurologist. At this time I was thinking of infection or aseptic necrosis. An arthrogram of the left hip showed no open connection between either of the two bullets and the hip joint. The neurological work-up showed no central nervous system abnormalities. Cervical spine osteoarthritis was noted. No specific treatment was ordered.

The patient was seen again in April 1984 following a motor vehicle accident and worked up for herniated nucleus pulposus lumbar spine

*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

and treated non-operatively. The left hip was asymptomatic.

In June of 1984, the patient returned with a history of weight loss and costo chondritis. A hemorrhoidectomy had been performed in May 1984.

Again in August of 1984 the patient complained of malaise and left hip and thigh pain as well as left arm pain. Non-operative treatment was given to the cervical spine.

In June 1985, secondary to a fall, the patient was examined and treated and again complained of chronic fatigue, weakness and malaise. He appeared depressed. At this time a 24 hour urine specimen was tested for lead and showed an elevated level of 95 UR (normal = 0 — 80). A deltaaminolevulinate acid test was also done on this same specimen (for possible chronic elevated lead levels) and was reported as 2.0 mgm./24 hour (normal 1.3 — 7.0). At this point an internal medicine consult was arranged but the patient was lost to follow-up. Hopefully he will return (from out of state) in the near future and ask for treatment.

In conclusion, it appears to me that any lead fragment retained in the body, in or abutting a joint or bursa is dangerous. Elective surgical removal of such fragments would seem to be the treatment of choice. If the fragment appears to be imbedded in bone contiguous to or within a joint or bursa it should be considered a possible source of lead intoxication and removed if surgically accessible.

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Serological Study of Selected Disease Antibodies in Arkansas—Furbearer Trappers, A High Risk Group

Gary A. Heidt,* Charles Harger,* Harold Harger*, and Thomas C. McChesney**

ABSTRACT

Furbearer trappers represent a high-risk group for potentially contracting pathogenic diseases transmissable from wildlife to humans. During the 1983-84 Arkansas furbearer season, 117 volunteer trappers (113 male, four female), representing 27 Arkansas counties, and one each from Oklahoma, Louisiana, Missouri, and Texas, had a blood sample drawn and the blood serum tested for antibodies to tularemia, leptospirosis, toxoplasmosis, and Rocky Mountain Spotted Fever. Eight (6.8%) of the subjects had antibody titers $\geq$ 1:20 for tularemia, 23 (20.2%) demonstrated antibody titers $\geq$ 1:64 for toxoplasmosis, one individual had an antibody titer to leptospirosis, and one subject had an antibody titer (1:8) to Rocky Mountain Spotted Fever. In all cases, the individuals reported, to their knowledge, they had never contracted any of the diseases. One individual who reported that he had tularemia in 1980 did not demonstrate an antibody titer. Five of the 28 individuals demonstrating antibody titers had antibodies to two diseases. Of the trappers providing data, 76% reported that they wore gloves less than 10% of the time when handling harvested wildlife and of those demonstrating antibody titers, all used gloves less than 50% of the time.

INTRODUCTION

There are a number of pathogens capable of infecting both wildlife and humans. Close contact between infected wildlife and humans has been shown to increase the probability of cross-transmission of many of these pathogens.[1,2,3] Thus, individuals whose professions or avocations involve extensive handling of wildlife represent a high-risk group.

This study was undertaken to survey furbearer trappers for serum antibodies to tularemia, toxoplasmosis, Rocky Mountain Spotted Fever, and leptospirosis. These diseases were chosen because of the relatively high incidence of their occurrence in Arkansas citizens and wildlife.

METHODS

A 5-10 cc blood sample was obtained, by RN's or M.D.'s, from furbearer trappers between November 1983 and March 1984 (this time period spanned the 1983-84 furbearer season in Arkansas). The blood was placed on ice and transported to UALR where the serum was removed and frozen at —20 C until analyses could be performed. Trappers who participated in the study were bled at section meetings of the Arkansas Trapper's Association and at regional fur sales. All trappers were asked how long they had trapped, whether they wore gloves when handling animals, counties where they trapped, whether, to their knowledge, they had ever contracted the diseases in question, and were required to sign a release before blood was drawn. Furthermore, in an effort to determine whether any of the diseases might have been contracted during the furbearer season, several trappers were bled before the season began (November 1983) and again two months after the season ended (March 1984).

Serum antibody determinations were made by personnel of the Division of Laboratories, Arkansas Department of Health. Tularemia and leptospirosis serum antibody titers were determined by the standard slide agglutination techniques.[4,5] Sera was tested for antibodies to *Toxoplasma* by

*Department of Biology, University of Arkansas at Little Rock, Little Rock, Arkansas 72204.
**Chief, Epizootic Diseases, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.

the hemagglutination technique and for antibodies to Rocky Mountain Spotted Fever by the complement fixation test recommended by the Centers for Disease Control.[6,7]

RESULTS AND DISCUSSION

A total of 117 furbearer trappers (113 male, four female), representing 27 Arkansas counties, and one each from Louisiana, Oklahoma, Missouri, and Texas, were bled and their sera tested for antibodies. Nine individuals were bled before and after the trapping season. The trapping experience of these subjects ranged from three months to over 50 years with a mean of 13.5 years of trapping furbearers.

Tularemia

A total of eight individuals (seven male, one female) of 117 tested (6.8%) had antibody titers to tularemia (Table 1). Three of these subjects were in the group bled before and after the furbearer season. The first two had no antibody titers before the season but demonstrated titers after the season, indicating that they probably contracted the disease during the furbearer season. It would seem reasonable that the disease was contracted from infected carcasses as the insect vectors would be dormant at this time. The third individual demonstrated antibody titers both before and after the season. All eight of the positive trappers stated that they had never had tularemia, indicating that they might have had contracted Jellison Type B tularemia. Jellison Type B tularemia is commonly found in rodents (e.g. beaver, muskrats, squirrels, rats, and mice), some birds, and ticks and often produces either sub-clinical or asymptomatic infections.[8] Possible routes of infection among trappers by this type of tularemia include handling infected carcasses without gloves, bites or scratches from temporary oral or paw carriers (e.g. bobcats, foxes, coyotes, and skunks), aerogenic infection, and ingestion of improperly cooked meat. As can be seen from Table 1, at least seven, and possibly all of the eight serapositive individuals wore gloves less than 25% of the time they were handling animals.

It is known that after several years antibodies to tularemia cannot be detected in serum. However, there is some disagreement as to exactly how long antibodies can be detected.[8] One individual reported having had tularemia in 1980 and his serum tested negative, demonstrating that, in this case, the individual's antibody titer had disappeared within four years.

Tularemia is an important disease in Arkansas, as the state has, for the past several years, ranked first and consistently accounted for over 20% of the nationally reported cases.[9] McChesney and Narain reported that most cases of human tularemia in Arkansas resulted from tick exposure (143 of 193 cases) and occurred from March through October. In randomly testing 50 male subjects they found no sera-antibody titers.[9] Considering that sera-antibodies disappear after a relatively short time and that we found a number of subclinical or asymptomatic cases in trappers (6.8%), we feel that tularemia should still be of concern to those individuals (such as trappers, hunters, veterinarians, and taxidermists) who are involved to a large degree with wildlife.

Toxoplasmosis

Toxoplasma gondii is an obligate, intracellular, coccidian protozoan. Infection of humans is one of the most common host-parasite interaction. In

TABLE 1
SUMMARY OF SERUM ANTIBODIES TO TULAREMIA IN 117 FURBEARER TRAPPERS

Sex	Number of Years Trapping	Glove Usage %	Titer	Titers To Other Diseases
Female	6	> 0	— 1:80*	Toxoplasmosis
Male	15	0 - 10	— 1:20*	Toxoplasmosis
Male	10	0 - 10	1:320 1:320*	—
Male	—	11 - 25	1:20	—
Male	8	0 - 10	1:80	Toxoplasmosis
Male	15	0 - 10	1:320	—
Male	10	11 - 25	1:80	—
Male	7	0 - 10	1:320	Toxoplasmosis

*These represent individuals bled in November 1983 and again in March 1984.

both congenital and acquired forms the infection may be subclinical or may produce a variety of clinical manifestations (e.g. lymphadenopathy, headache, rash, fever, etc.). The protozoans are ubiquitous in nature and infect herbivorous, carnivorous, and omnivorous animals, including all orders of mammals, some birds, and probably some reptiles. Members of the family Felidae are generally accepted as the definitive hosts in the life cycle, as no other animal has been found to shed oocytes.[10]

In this study, 23 of 114 trappers (20.2%) demonstrated titers to *Toxoplasma* (Table 2). In addition, three of the nine who were bled before and after the furbearer season showed titers at both bleedings. One of the individuals demonstrated an increase in titer level indicating that she had either contracted the disease before the season started or was re-exposed during the season (Table 2). Further examination of Table 2 also shows that more than 81% of those individuals demonstrating antibody titers wore gloves less than 25% of the time that they were handling animals. One route of infection for trappers could be through the handling of bobcats as six of eight bobcats tested for antibodies to *Toxoplasma* demonstrated significant titers.* *Toxoplasma* can also be acquired from infected house cats and we have no data as to how many positive trappers might have come in contact with this potential source of infection. However, it should be noted that many trappers keep house cats in order to reduce fur damage by mice and rats.**

While we feel that the incidence of toxoplasmosis is significant in the trappers (a high-risk group) it is not out of line with other studies which have found human incidence ranging from 20-30% of tested individuals.[10] We would caution, however, that trappers should always take sanitary precautions and be especially careful if they are pregnant

*Contact senior author for data.
**Personal communication: Parker L. Dozhier, Director, American Fur Resources Institute, 1983.

TABLE 2
SUMMARY OF SERUM ANTIBODIES TO *TOXOPLASMA* IN 114 FURBEARER TRAPPERS

Sex	Number of Years Trapping	Glove Usage %	Titer	Titers To Other Diseases
Female	6	> 0	1:64 1:256*	Tularemia
Male	20	0 - 10	1:256 1:256*	—
Male	15	0 - 10	1:256 1:256*	Tularemia
Male	25	0 - 10	1:256	—
Male	4	0 - 10	1:256	—
Male	—	0 - 10	1:64	—
Female	1	0 - 10	1:256	—
Male	30	0 - 10	1:256	—
Male	45	> 0	1:128	—
Male	24	26 - 50	1:128	—
Male	8	0 - 10	1:64	Tularemia
Male	35	0 - 10	1:256	—
Male	30	0 - 10	1:256	—
Male	40	0 - 10	1:256	—
Male	45	—	1:256	—
Male	5	0 - 10	1:256	—
Male	10	—	1:64	—
Male	43	26 - 50	1.64	—
Male	15	11 - 25	1:64	—
Male	2	0 - 10	1:64	—
Male	10	0 - 10	1:64	Rocky Mountain Spotted Fever
Male	7	0 - 10	1:256	Tularemia
Male	5	0 - 10	1:256	—

*These represent individuals bled in November 1983 and again in March 1984.

or if they have pregnant wives helping with the handling of fur, particularly bobcats.

Leptospirosis and Rocky Mountain Spotted Fever

Leptospirosis and Rocky Mountain Spotted Fever (tick-borne typhus fever) were insignificant in this study. Only one individual for each disease demonstrated an antibody titer. The individual demonstrating a titer to leptospirosis (1:256) was from southeastern Arkansas and the individual with an insignificant titer (1:8) to Rocky Mountain Spotted Fever was from northwestern Arkansas.

In the past, leptospirosis generally has been regarded as an occupational disease, placing trappers in a high-risk group. Furthermore, the incidence of leptospirosis has been demonstrated in a number of Arkansas wildlife species, such as deer, bobcat, and skunks.[11,12] Thus, we would have expected to find a higher incidence of leptospirosis in our trapper population.

Rocky Mountain Spotted Fever, a tick-borne rickettsial disease, is significant in Arkansas.[13] The potential for infection in trappers primarily exists through interactions with ticks either found on wildlife or in nature before the trapping season; as ticks would generally be dormant during the season (December-January).

Multiple Disease Antibodies

Examination of Tables 1-3 show that of the 28 individuals demonstrating antibodies to one of the four diseases, five (17.8%) carried antibodies for a second disease. Considering the limited number of diseases tested for, we feel this is a significant percentage. Again, because of the high-risk nature of furbearer trapping to the acquisition of wildlife diseases we would expect a high incidence to multiple antibody titers.

Trapper Precautions

Since furbearer trappers do represent a high-risk group with respect to wildlife diseases, it is extremely important that the trapper exercise proper precautions to avoid exposure. The most obvious and easiest precaution is that of sanitary handling of harvested animals. Wearing of rubber gloves and proper washing of hands is minimal. In spite of this, Table 3 shows that 75% of our trappers reported that they do not wear gloves and 90% wear gloves 50% or less of the time. These figures may be higher because of the 6.5% who reported wearing gloves, but did not indicate how much. Further examination of Table 3 shows that all of the individuals demonstrating antibody titers to one or more diseases fell into the above categories, with the vast majority (73%) indicating that they wore gloves less than 10% of the time.

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TABLE 3
SUMMARY OF THE USE OF GLOVES BY 108 FURBEARER TRAPPERS AND THE INCIDENCE OF SERUM ANTIBODIES TO ONE OR MORE DISEASES

Percent of Time Gloves Used	Number of Trappers (%)	Number of Trappers With Serum Antibodies To One or More Diseases (%)
0 - 10	81 (75)	19 (73)
11 - 25	7 (6.5)	3 (11.6)
26 - 50	9 (8.4)	2 (7.7)
51 - 75	2 (1.8)	0
76 - 100	2 (1.8)	0
> 0 but unknown	7 (6.5)	2 (7.7)

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ANSWER—Electrocardiogram of the Month

DISCUSSION: A sinus mechanism at a rate af 100 per minute is nated. The QRS exceeds 0.12 seconds and a pattern af right bundle branch block is present. Right axis deviation is seen as is the pattern of left pasterior fasicular block. Q waves plus ST-T changes in V_1 through V_5 are compatible with anteroseptal infarction. In summary, the trace reveals changes of infarctian camplicated by bifasicular block. The feature editor is grateful to Dr. Davis of the UAMS Divisian of Cardiology far his substantial contributian ta this month's feature.

Pediatric Update:

Benign Cardiac Rhythm Variations in the Newborn Infant

E. A. Kiel, M.D., R. I. Readinger, M.D., W. T. Dungan, M.D., and J. B. Norton, M.D.*

INTRODUCTION

Variations in heart rate and rhythm are frequently seen in newborn infants, and fortunately are not usually associated with underlying disease. Because these changes often elicit concern that associated signs of decreased cardiac output may develop, the occasional healthy newborn with variations in heart rate and rhythm can be very worrysome to the pediatrician or family physician. What does the physician do when confronted with the 2 day old with an irregular rhythm or an intermittent heart rate of 60 or 70 beats per minute? The following illustrative cases and discussion are presented to reassure the physician in his management of these newborns.

CASE 1

A 1 day old term newborn, product of a normal pregnancy, labor and delivery, was noted to have an irregular rhythm in the newborn nursery. An ECG revealed frequent premature ventricular contractions (PVC's). Physical exam revealed a 3785 gm. term newborn with weight, height and head circumference at the 90th percentile for 38 weeks gestational age. The heart rate was 110/min, respiratory rate 36/min and blood pressure 76/34 mm. Hg. The physical examination was normal except for the irregularity in pulse and precordial impulse. The following ECG was recorded (Fig. 1). The infant was hospitalized for 2 days at Arkansas Children's Hospital for observation. The PVC's continued without evidence of couplets or ventricular tachycardia. The infant was discharged home, doing well after 2 days, with a normal exam and ECG on follow up.

CASE 2

A 3 day old infant was transferred to Arkansas Children's Hospital with an irregular cardiac rhythm. The infant was the product of a term, uncomplicated vaginal delivery. The irregular

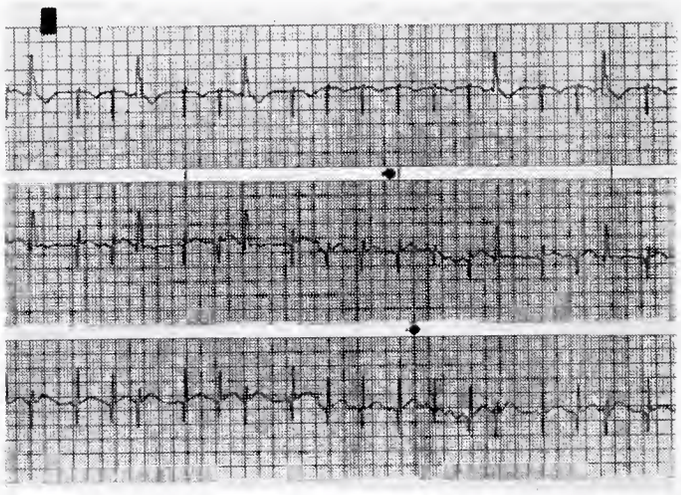


Figure 1.

12 lead ECG with frequent atrial premature contractions. Note non-conducted and aberrently conducted PAC's.

rhythm was noted shortly after delivery and an IV of D5¼NS was begun and the baby placed in 30% oxygen. Serum electrolytes, complete blood count and arterial blood gas were normal. Physical exam revealed a Gr2/6 systolic murmur initially, but was later normal. The ECG on arrival (Fig. 2) to ACH revealed frequent premature

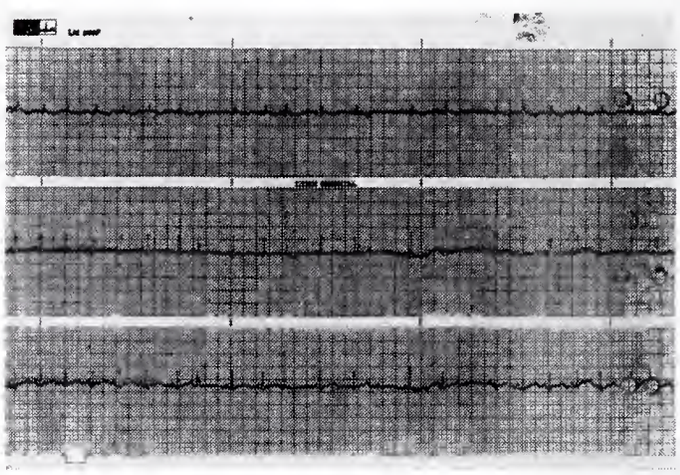


Figure 2.

ECG with frequent, uniform premature ventricular contractions.

atrial contractions (PAC's). He was observed for 2 days, during which time his exam and repeat laboratory studies remained normal. He was discharged home with a normal ECG on follow up and no noted problems.

*Division of Pediatric Cardiology, University of Arkansas for Medical Sciences and Arkansas Children's Hospital, Little Rock, Arkansas.
Send correspondence to: Ernest A. Kiel, M.D., University of Arkansas for Medical Sciences, Department of Pediatrics, 4301 West Markham, Little Rock, Arkansas 72201.

DISCUSSION

Information concerning the frequency of heart rate and rhythm variability in term and preterm infants is not readily apparent in standard pediatric or neonatal texts. Much of this information is scattered through the medical literature and occasionally is conflicting or overlooked. Most evidence suggests that 1-5% of normal, healthy newborns can present with heart rate and rhythm disturbances that are felt to be significant.[1,2] More intense investigation with prolonged monitoring yields a greater frequency of detected disturbances. The findings can be separated into two categories—variations in heart rate and irregularities in rhythm.

Normal heart rates in infants have been reported by Ferrer[3] to vary greatly (Table 1).

Average, Minimal, and Maximal Heart Rates (Beats/Minute) in Healthy Full-Term and Premature Neonates

	Full Term *			Prematures (1500–2500 g) †			Prematures (Under 1500 g) †		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
1–7 days	133	100	175	147	100	195	145	125	168
1–4 weeks	163	115	190	157	123	190	161	110	192

* *From Ziegler.*[20]
† *From Walsh.*[21]

Rapid, but transient, sinus tachycardia (greater than 180/min) is not at all unusual in the agitated, stressed or stimulated infant. Recently, Southall[2,4] has indicated that lower rates are normal in healthy newborns. Heart rates as low as 50 to 60 beats per minute for short periods of time are to be expected in the newborn, with episodes of junctional escape rhythm often occurring (25%). In the premature newborn the same pattern has been reported. Morgan[5] noted sinus bradycardia (up to a 50% drop in heart rate) in 40% of preterm infants, with junctional escape rhythm in one fourth. The infants who developed these "slow" heart rates were healthy and asymptomatic during these episodes. It is common to exaccerbate a bradycardia with manipulation of the newborn during nasogastric tube placement, venipuncture, intubation, etc., or to have rate drops during feeding, crying, sleeping or defecation. These are merely indicators of an intact cardioregulatory response to vagal stimulation in the newborn. On occasion, a challenge administration of atropine 0.01 mg/kg can indicate the contribution of vagal input to the bradycardia.

Once an ECG confirms an underlying sinus rhythm, it can be concluded from these reports that healthy infants who are asymptomatic with "slow" heart rates require only observation, and treatment is not indicated. The presence of underlying disease or metabolic abnormalities should be sought for and corrected. An example of how well tolerated bradyarrhythmias are in the newborn may be best seen in the infant with congenital complete heart block, where a fixed heart rate of 40 to 60/min. may be present.[6] Such an infant without associated structural cardiac anomalies is usually quite asymptomatic.

Irregularities in cardiac rhythm are frequently encountered. These are predominantly supraventricular in origin, although ventricular arrhythmias may also occur. Irregular rhythm may occur in either the term or preterm infant. A sinus arrhythmia may normally be present in infants, although the degree of rate change is generally not as great as that encountered in the older child. Vagal stimuli may often accentuate the irregularity and beat-to-beat variation. In reviewing over 3,000 standard ECG's and 143 continuous Holter recordings, Southall, et al.,[2,4] noted that irregularity in heart rhythm was commonly due to atrial (PAC) or ventricular (PVC) premature beats. An occasional infant with supraventricular tachycardia (SVT) and rarely ventricular dysrhythmias were noted. Sinus pauses were noted in 72% of infants scanned, including patterns of sinoatrial exit block and variable sinoatrial Wenckebach block. Close examination often revealed that sinus pauses were likely due to blocked PAC's.

What is the clinical significance of such findings? Follow up evaluation of newborns with these changes would indicate that they are benign and transient in those infants with no evidence of an underlying cardiac or medical disorder. Southall noted resolution of ECG abnormalities in 85% of healthy infants by 3 months age and in all patients followed to 1 year.

Premature atrial contractions are consistently the most common rhythm disturbance in the healthy newborn. They require no treatment as such, but because of the potential to institute a reentrant supraventricular tachycardia, Gillette and Rose[7] have recommended treatment in newborns with frequent (over 20 per hour) PAC's. One should be aware, however, that frequent PAC's invariably are seen in the first few days after birth, and it seems reasonable that simple observation of these infants is warranted. An episode of SVT would indicate the need for treat-

ment in infants even without acute hemodynamic alterations.

The management of ventricular premature beats, couplets and ventricular tachycardia is less clear. Stevens[8] found ventricular arrhythmias to be uncommon in the neonatal period. Those who experienced clinically significant problems with ventricular arrhythmias generally had underlying disease states. These patients should be treated appropriately for these underlying conditions. Healthy newborns with ventricular arrhythmias practically always do well without intervention and have spontaneous resolution of the arrhythmia. Therefore, treatment of these infants is generally not indicated, and observation for several days with close evaluation for an underlying disease process seems reasonable. If PVC's increase in frequency with agitation, crying or activity, or if ventricular tachycardia occurs, then more complete evaluation and possibly referral to the pediatric cardiologist is warranted.

In summary:

1. Significant cardiac rhythm disturbances are seen in 1-5% of healthy term and preterm newborns.
2. Transient episodes of bradycardia with heart rates to 50-60/min. occur in up to 70% of healthy newborns, with junctional escape rhythm in one fourth of these.
3. Transient sinus tachycardia with rates more than 180/min. occur commonly with stimulation or increased sympathetic tone.
4. Supraventricular tachycardia is the most common arrhythmia of hemodynamic consequence in infants and should be treated aggressively.
5. Ventricular tachyarrhythmias, in the absence of underlying disease states, are quite rare and warrant evaluation, although often are benign and need not be treated.
6. Irregularities in heart rhythm are most likely due to atrial or ventricular premature beats and do not require treatment unless there is precipitation of supraventricular or ventricular tachycardia.
7. Sinus pauses and variable sinoatrial block may be seen and do not need treatment.
8. Congenital complete heart block deserves complete evaluation, as a significant portion of such patients have associated structural cardiac anomalies and all require careful follow up.

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Surgical Overview:

Local Anesthesia for Anorectal Surgery: Application of an Improved Technique

John C. Gocio, M.D.*

INTRODUCTION

Many patients who undergo simple anorectal procedures are unnecessarily subjected to a general or spinal anesthesia with their inherent risk factors. Local anesthesia has been shown to be satisfactory when utilized for simple anorectal procedures.[1,2] Many surgeons are reluctant to use this technique because, as traditionally carried out, it can be inadequate.[3] We have used an improved technique at the University of Arkansas for Medical Sciences and the Veterans Administration Medical Center for the last three years. This modification of technique was developed and described previously by Nivatvongs at the University of Minnesota.[3]

TECHNIQUE

Patients are given an appropriate narcotic and Valium thirty minutes to one hour prior to the procedure and are often given supplemental intravenous Valium immediately prior to starting the technique (all of our patients have intravenous catheters in place).

The perianal area is not shaved. We position our patients prone or in the Sims position. The buttocks are spread with tape. A routine skin prep is then performed (Betadine paint) and the area is draped in sterile fashion. A Uro-jet 2% Xylocaine jelly injector is used to anesthetize and lubricate the anal canal. Digital examination is performed and then a well lubricated small anoscope (Vernon-David) or small bivalve speculum is gently inserted into the anal canal. We use an anesthetic solution of 0.5% lidocaine (Xylocaine) or 0.25% bupivacaine (Marcaine), both with 1:200,000 epinephrine.

Two to three ml. of solution is injected in each of four quadrants submucosally at a point 2mm above the dentate line using a 10cc syringe and a 2.5 inch 25 gauge needle. The syringe is gently aspirated prior to injection to prevent intravascular injection. The anoscope is then removed and a well lubricated index finger is placed in the anal canal to gently squeeze the solution in each wheal below the dentate line within the submucosal plane. This is best done by bending the finger over the anesthetic wheal in an "L" shape and repeatedly withdrawing it distally. The speculum or anoscope is then again lubricated and re-inserted. Two ml. of solution is then injected in each of four quadrants at about two mm. below the dentate line in the submucosal plane (not intramuscular). The anal verge area is then massaged to spread the anesthetic solution around the anus. Supplementation into the submucosal anoderm may be required between the four quadrants injected. Usually, only about 20-25cc of anesthetic solution is required. For procedures confined to one area of the anal canal, only that area of the anoderm and perianal tissue will need to be injected at the second injection step.

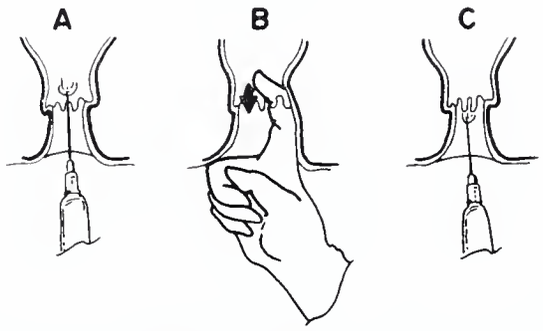


Fig. 1. A. Injection 2mm proximal to the dentate line.
B. Displacing the solution distally.
C. Injection 2mm below the dentate line.

CASE APPLICATION

We have used this technique for hemorrhoidectomy, correction of fisutla-in-ano (fistulotomy), lateral subcutaneous internal sphincterotomy, excision of anorectal polyps, excision of hypertrophied and symptomatic anal papillae, transrectal drainage of pelvic abscess, anorectal examination, and rubber band ligation of hemor-

*Department of Surgery, University of Arkansas for Medical Sciences, Little Rock, Arkansas 72205 and Department of Surgery, John L. McClellan Memorial Veterans Administration Medical Center, Little Rock, Arkansas 72205.

rhoids. Actually, patients who undergo simple rubber band ligation of hemorrhoids require no anesthesia unless muscular relaxation or other associated procedures are required.

We have used this technique on a patient with both an acutely thrombosed external hemorrhoid and an internal component for a combined procedure.

DISCUSSION

This technique is easy to use, safe, effective, and well accepted by patients. It does require that the surgeon be gentle and communicate with the patient during the anesthetic administration technique. The second injection step, like the first, is usually painless because the anal canal above the dentate line is relatively insensitive to pain and the sensitive anoderm and anal canal below the dentate line is anesthetized by the downward submucosal spread of anesthetic solution from above the dentate line.[3,4] Muscular relaxation also results from this submucosal placement of anesthetic and injection of muscle is not required.[2]

Dissection is easier due to the separation of tissue planes by the anesthetic solution and hemostasis is excellent. We have been satisfied with the degree of muscular relaxation and the level of anesthesia obtained. Patients have a much lower incidence of post-operative urinary catheterization when local anesthesia is used, especially when patients are required to void prior to operation and fluids are restricted intraopertively and post-op.[5] Significant post-operative pain relief can also be afforded with the longer acting anesthetic agents (0.25% bupivacaine with 1:200,000 epinephrine).[6]

Patients being considered for local anesthesia must be selected with some contraindications in mind, however. Patients with fat or large buttocks or a deep natal cleft are generally not able to comfortably undergo this technique. This has been well described by Nivatvongs.[7] Patients with acute fissure or those with highly sensitive chronic fissures are intolerant of simple digital examination of the anal canal and, as such, generally don't tolerate this technique. Inability to tolerate rectal exam after using Xylocaine jelly precludes using this technique. When patients with chronic anal fissure who can tolerate digital exam are treated with this technique, we use 2% Xylocaine jelly prior to the technique and for lubrication of anoscope or speculum.

Xylocaine (lidocaine) and Marcaine (bupivacaine) are effective and have a low incidence of toxicity.[2,8,9] Epinephrine is essential, primarily to reduce capillary bleeding and to prolong anesthesia time. Because of the vasoconstriction, absorption of anesthetic is reduced and prolonged. Thus, higher blood levels are avoided and the chance of a toxic reaction is reduced. However, toxic reaction to epinephrine itself can be produced by too high of a blood level and the surgeon must be prepared to recognize and treat this unusual situation. We are now using hyaluronidase, and its use is recommended.[10] Hyaluronidase facilitates the spread of anesthetic into the tissues by inactivating hyaluronic acid.[8,11] It is not toxic to tissue, reduces swelling, and increases the absorption of blood back from the tissues.[12] Allergic reaction to hyaluronidase is insignificant.[8,10] It can, however, theoretically shorten the duration of anesthesia time and increase the risk of a toxic reaction to the local anesthetic or epinephrine. This would be unusual at the smaller dosage of 150 units per 50 ml. of anesthetic solution.[11] Allergic reaction to local anesthetic agents is extremely rare.[13] Most cases of "reactions" are due to excessive dosage or intravascular injection. With care and correct technique, the risk of reaction should be extremely low. The surgeon who does use this technique must, however, be familiar with safe dosages of the chosen agents. He or she must also be knowledgeable as to the manifestations of allergic and toxic reactions of all substances used and must be equipped and prepared to treat these possible problems.

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Radiology Perspective:

Clinical Magnetic Resonance Imaging

Robert W. Laakman, M.D.,* H. Howard Cockrill, M.D.,* and Ralph J. Alfidi, M.D.**

INTRODUCTION

Magnetic Resonance Imaging (MRI) is an exciting new imaging technique which allows tomographic images of the body to be obtained in many different projections without the use of ionizing radiation. MRI has been used to visualize almost every region of the body. The purpose of this paper is to review the physical principals involved in forming a magnetic resonance image as well as to discuss the clinical uses of magnetic resonance imaging.

PHYSICAL PRINCIPALS

MRI utilizes a combination of a strong magnetic field and a radiofrequency transmitter to produce an image. Current imaging techniques study the hydrogen atom or proton. Because of the large amount of water and fat in the body, there is an abundance of protons in our tissues. When a patient is placed in a magnetic field, the hydrogen protons behave like tiny bar magnets and align themselves either with or directly opposed to the direction of the magnetic field. Next, a harmless radiofrequency wave is transmitted into the body; this excites the protons in the tissue slice being studied and puts them into a higher energy state. When the radiofrequency transmitter is turned off, the protons revert back to their lower baseline energy state. In doing so they give off the "extra" energy in the form of a radiofrequency wave. It is this signal which is used to form the magnetic resonance image.

The intensity of the signal emitted by the body is determined by several factors. First, there are factors which are intrinsic to the tissues themselves. These intrinsic factors include proton density, flow, and the relaxation times T1 and T2. Most soft tissues in the body have similar proton densities; therefore there is little difference in signal intensities between soft tissues due to difference in proton densities. However, air filled structures (lung, paranasal sinuses, bowel), cortical bone, and fibrous tissues have low proton density and emit little signal.

Flow is a very complex phenomenon. However, a few general statements can be made. Rapidly flowing blood emits little or no signal. On the other hand, very bright signal can be seen in areas of slow flow.

The T1 and T2 relaxation times are perhaps the most important intrinsic factors to be considered in magnetic resonance imaging. These relaxation times describe the behavior of a hydrogen protons when exposed to exciting radiofrequency pulse in the presence of a strong magnetic field. All tissues have both a T1 and a T2 relaxation time; each tissue behaves in two separate ways when subjected to an RF pulse in the magnet. The T1 and T2 times are related to molecular size and structure. Thus, different tissues, because of differences in molecular composition, will have different T1 and T2 times. MRI utilizes these differences in T1 and T2 times to distinguish various tissues and fluids within the body. In fact, T1 and T2 differences among tissues are significantly more sensitive indicators of pathology than are the electron density differences used in x-ray. In general, tissues with a short T1 or a long T2 emit a strong signal. Conversely, tissues with a long T1 or a short T2 emit a weak signal. Certain tissues, such as fat, have both a short T1 and a long T2, and will always produce a strong signal. On the other hand, pure fluids have both a long T1 and a long T2. In this case, a weak signal will be obtained if the T1 characteristics are accentuated, while a strong signal will be obtained if the T2 characteristics of the fluid are accentuated.

The intensity of the signal is also determined by operator controlled parameters. These are parameters that can be manipulated by the physician performing the MRI examination. These operator controlled parameters are the TE (time to echo) and the TR (repetition time). The TE and the TR refer to the timing of the radiofrequency pulsing sequences sent by the transmitter. By changing the TE and the TR one can tailor the radiofrequency pulse sequence sent into the pa-

*Radiology Associates, P.A., 500 South University, Little Rock, Arkansas 72205.
**Dept. of Radiology, University Hospitals of Cleveland, 2074 Abington Road, Cleveland, Ohio 44106.

tient to accentuate either the T1 characteristics or the T2 characteristics of a given tissue.

SAFETY

Extensive clinical experience and laboratory studies to date indicate that magnetic resonance imaging is a very safe procedure. A patient is not subjected to ionizing radiation or any other known biologic harm during an MRI examination performed at approved radiofrequency and magnetic field strength. Most patients may be scanned in the MRI scanner, but there are important exceptions to this rule. Patients who require respiratory or other life support equipment cannot be scanned due to the attraction of the metallic components of the equipment to the magnet. Patients with cardiac pacemakers or other biomechanical stimulator devices also cannot be scanned.[1] Electric currents can be induced in the pacemaker lead wires and exposure of a pacemaker to the magnetic field may cause the pacemaker to switch modes. Patients with intracranial aneurysm clips are also excluded from magnetic resonance imaging. Early experimental work demonstrated that certain aneurysm clips with ferromagnetic properties could experience significant torque when exposed to a magnetic field and thus could theoretically twist off of a vessel.[2] Routine surgical hemoclips can be scanned with no untoward affects, however. In fact, the CT scan "clip artifact" that often obscures pathology does not occur with MR scanning. Also, patients with a variety of metallic implants (orthopedic prostheses, tantalum mesh, etc.) have been successfully scanned without incident.

CLINICAL APPLICATIONS

Head

Magnetic resonance imaging of the head has been extremely successful.[3] There is excellent delineation of the normal anatomy in the head. Utilizing proper pulsing sequences it is easy to separate the grey and white matter of the brain. The basal ganglia, thalamus, pons, medulla, cerebellum, corpus callosum, pituitary gland, C.S.F. spaces, and vascular structures are routinely visualized. The excellent depiction of normal anatomy not only improves localization of abnormalities, but also allows the detection of subtle lesions of the brain that might not be imaged with other techniques.

A variety of pathologic processes have been studied with magnetic resonance imaging. MRI is particularly sensitive in the detection of demyelinating diseases (Fig. 1). The typical appearance of multiple sclerosis on MRI is multiple areas of increased signal intensity in the white matter of

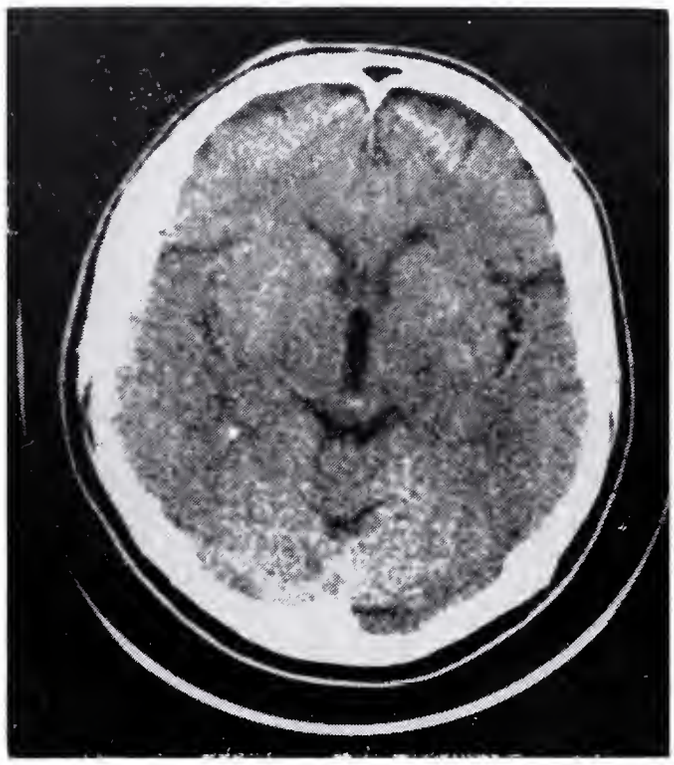


Figure 1-A.

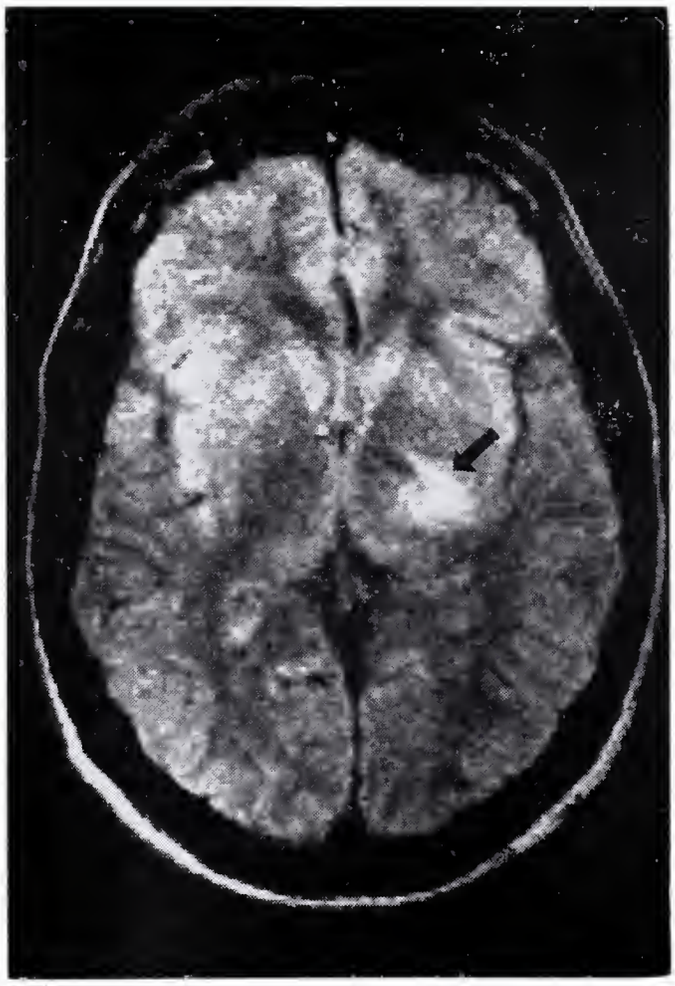


Figure 1-B.

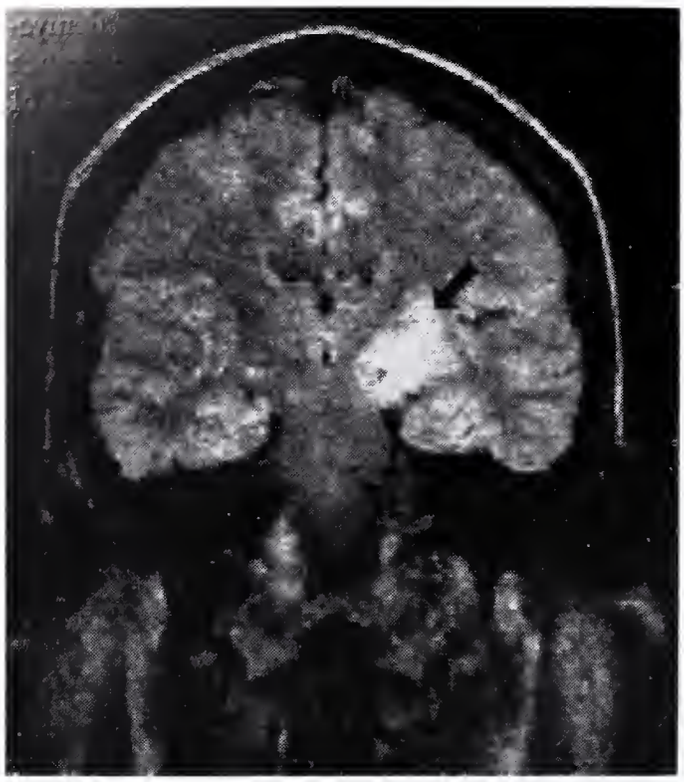


Figure 1-C.

Post infection demylination. 47-year-old with right sided neurologic symptoms and papilledema following a severe viral illness. Symptoms have gradually cleared over a 2-month interval. A.) Normal C.T. Scan. Angiogram was also normal. B. & C.) 0.35 TESLA axial and coronal M.R.I. scans (T.R. 1.9, T.E., 105). Note area of long T2 signal (arrow) deep, in the region of the posterior limb of the left internal capsule, globus pallidus, and thalamus with extension into the cerebral peduncle. The lesion was isointense on T1 weighted scans.

the brain on T2 weighted images. MRI is more sensitive than CT (Fig. 2) in the detection of the plaques of multiple sclerosis.[3] Additionally, MRI detects MS plaques in regions where previously they were either unexpected or infrequently demonstrated (basal ganglia, brain stem, and spinal cord) by CT.

MRI also appears to be sensitive in the detection of vascular insults to the brain. Laboratory studies have demonstrated that cerebrovascular accidents can be detected as early as 3 hours following the initial insult,[4] and MRI appears more sensitive than CT in the detection and localization of cerebrovascular accidents. One shortcoming of MRI is that currently in the first 24 to 48 hours bland infarctions cannot reliably be separated from hemorrhagic infarction. Small vessel disease of the brain can also be detected. Multiple lacunar infarcts are not infrequently seen in older patients who often have a history of hypertension. This entity has been called subcortical arteriosclerotic encephalopathy (Binswanger's Syndrome), and its appearance on MRI is often similar to that of multiple sclerosis.

Intracranial neoplasms are also well demonstrated with MRI. In many instances, the tumor is detected due to its increased water content. Because of this, however, occasionally it is difficult to separate the actual tumor from surrounding edema. At this time the separation of tumor from surrounding edema is probably more accurately made with contrast enhanced CT scans.

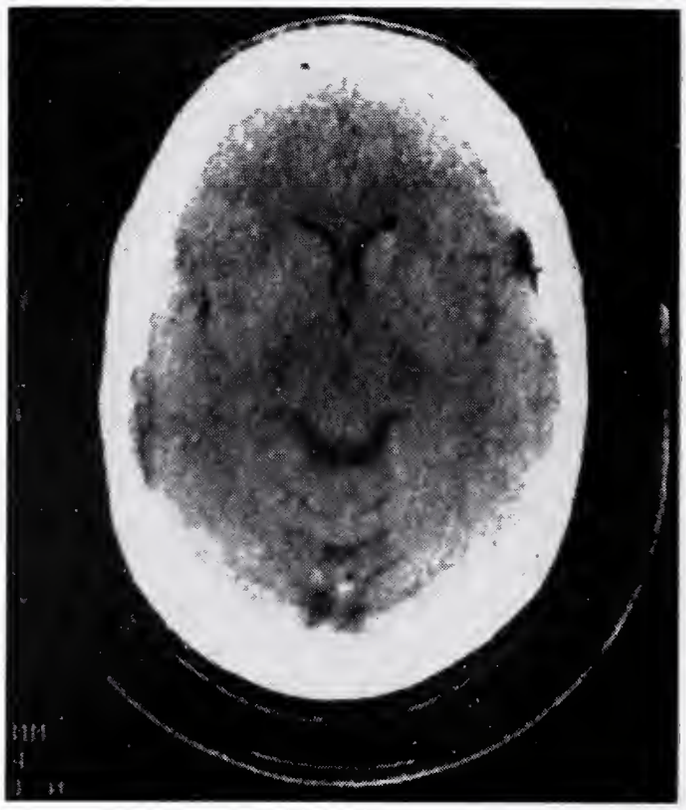


Figure 2-A.



Figure 2-B.

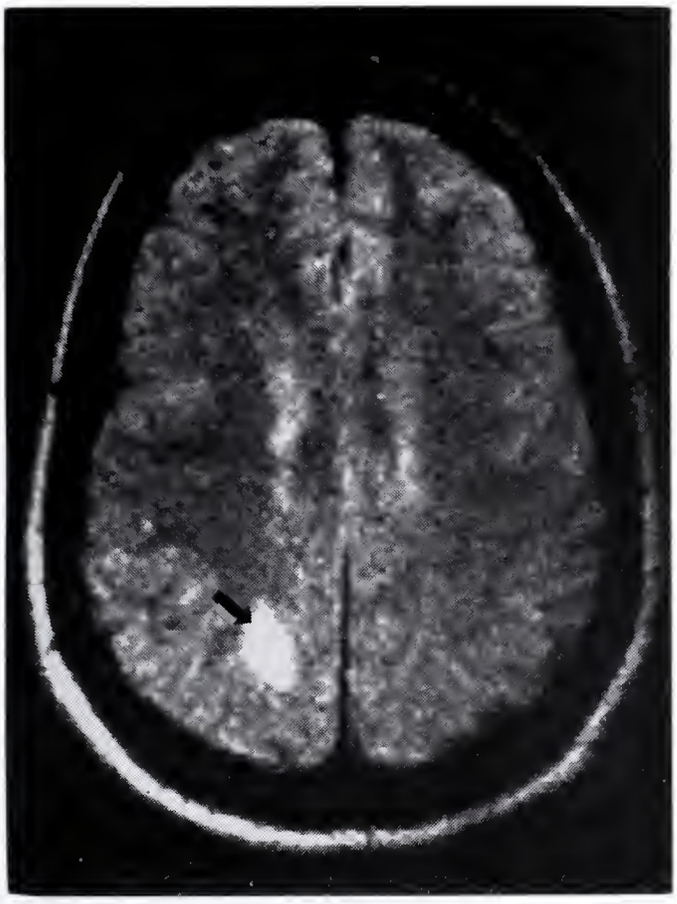


Figure 2-C.

Multiple sclerosis. A.) normal C.T. scan. B.) 0.35 TESLA axial M.R.I. scan (T.R. 1.9, T.E. 105). Abnormal T2 signal is seen in the periventricular white matter (arrows), a typical location for the demylinating plaques of multiple sclerosis. C.) Axial M.R.I. scan (T.R. 1.9, T.E. 105) another focus of long T2 signal is seen in the white matter of the right occipital lobe.

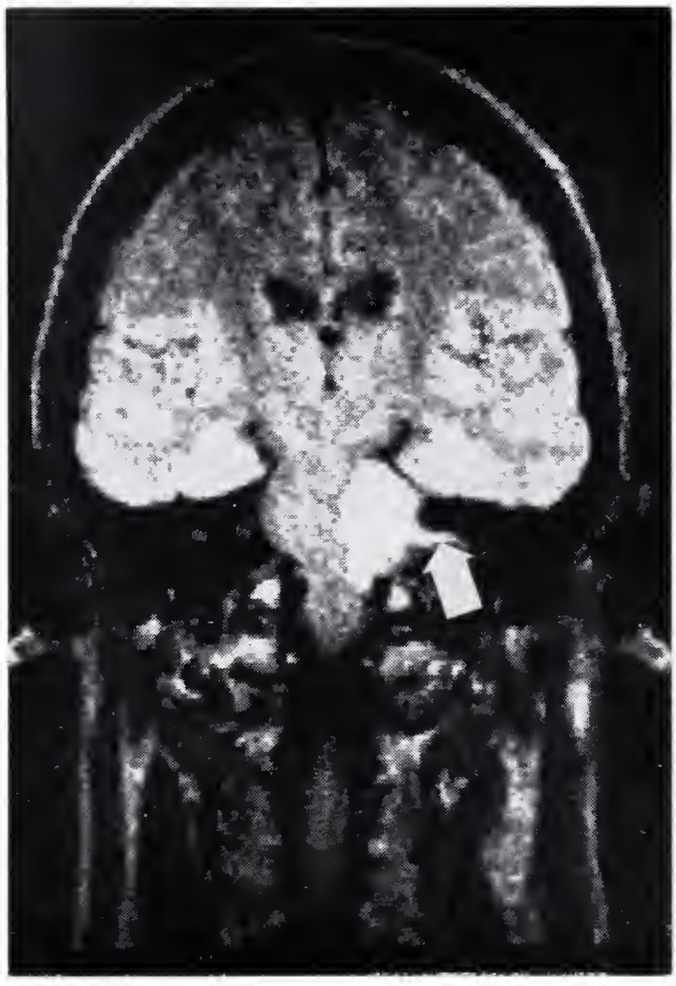


Figure 3.

Acoustic neuroma (surgically proven). 0.35 TESLA Coronal M.R.I. scan (T.R. 1.9., T.E. 35). Not only is the large cisternal component of the tumor seen, but intracanulicular extension (arrow) is also well demonstrated.

However, with the advent of improved MR technology and with the introduction of MR contrast agents, the ability of MRI to separate tumor from edema will improve. Magnetic resonance imaging is particularly useful in detecting those tumors which are difficult to define on CT. This would include tumors of the posterior fossa,[5] temporal lobe tips, low grade tumors with little mass affect, and intracanalicular 8th nerve neuromas.[6] Early studies have indicated that MRI is sensitive in detecting intracanalicular extension of 8th nerve neuromas, which otherwise might only be diagnosed on CT with intrathecal metrizamide or air (Fig. 3).

MRI has also been useful in the detection of extraparenchymal fluid collections.[7] MRI has two major advantages over CT in the detection and evaluation of extraparenchymal fluid collections. With CT imaging, subdural hematomas may undergo a phase 2 to 4 weeks following the initial insult when they become isodense with the underlying brain parenchyma. During this time it may be difficult to detect a subdural hematoma. Unlige CT, there does not appear to be an isodense phase with MRI. With MRI, scans can be obtained directly not only in the axial plane, but also in the sagittal and coronal planes. This is extremely useful when trying to detect subtemporal or tentorial fluid collections.

Because rapidly flowing blood returns little or no signal, vascular malformations in the head are generally seen as areas of low signal intensity (Fig. 4). However, areas of slow flow can return signal. Therefore, in some instances, areas of slow flow and fast flow can be separated on the basis of their signal intensities. Occasionally, areas of increased signal intensity may be seen on T2 weighted images in the parenchyma surrounding vascular malformations. Although the etiology of this increased signal is not known, it has been suggested that this represents areas of ischemia due to a vascular steal phenomenon.[3]

Due to its ability to image in the axial, coronal, and sagittal planes, MRI is extremely useful in evaluating areas which are difficult to study in the routine CT axial plane. Thus, MRI is useful in the evaluation of the sella, posterior fossa,

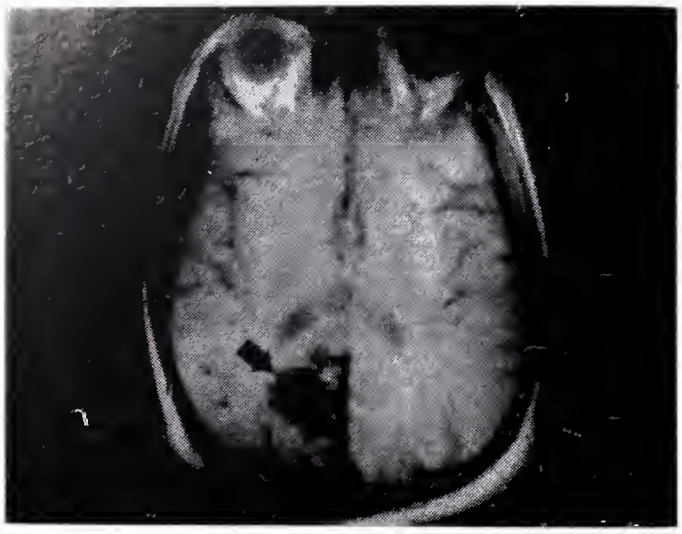


Figure 4.

Arteriovenous malformation. 1.0 TESLA Axial M.R.I. scan with T1 weighting (T.R. 0.5, T.E. 35). Right occipital lobe A.V.M. manifested as a dark area of "signal void" because of the fast flowing blood through the lesion.

cranial-vertebral junction, and subtemporal regions. It has been shown that MRI can nicely display the normal sella and its contents.[8] The C.S.F. in the suprasellar cistern is easily delineated from the pituitary gland itself. The optic nerves, optic chiasm, infundibular stalk, and carotid arteries in the cavernous sinus are typically visualized in the sagittal or coronal planes. Adenomas of the pituitary (Fig. 5) are readily demonstrated

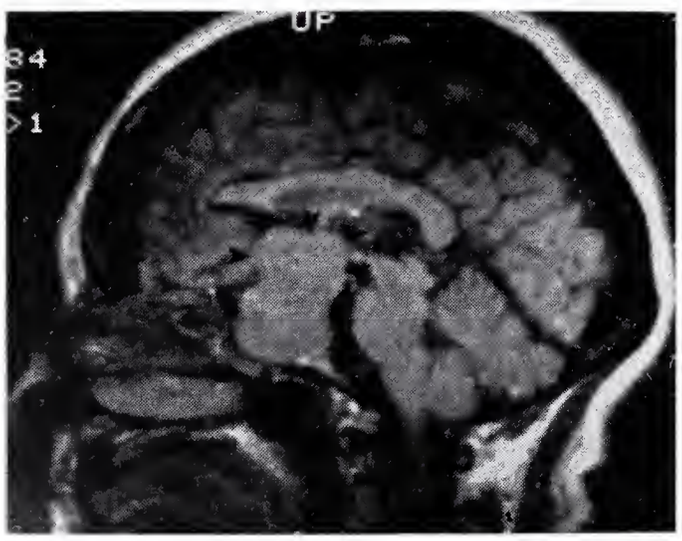


Figure 5.

Pituitary adenoma. 1.0 TESLA Sagittal M.R.I. scan (T.E. 2.0, T.R. 30). Large pituitary adenoma expands the sella; suprasellar extension (arrowheads) distorts anatomy of the suprasellar structures.

and their affect on the optic tract and adjacent portion of the carotid artery can be visualized. MRI is also useful in evaluating the postoperative sella. In patients in which the postoperative sella floor is packed with fascia lata, the contents of the sella, as well as the suprasellar portion of the optic tract, can be seen. When tantalum mesh is placed in the sella floor an artifact is generated which prohibits visualization of the sella contents themselves. However, the suprasellar cistern can be seen, and suprasellar extension of tumor or involvement of the optic tracts can be excluded.

MRI has been shown to be superior to CT scanning in the posterior fossa.[9] This is due not only to the ability of MRI to scan in multiple planes, but is also largely due to the absence of artifacts generated by the dense bone surrounding the posterior fossa that are often encountered with CT scanning. Sagittal and coronal scanning in the posterior fossa can also be useful in differentiating intra-axial lesions from extra-axial lesions. This differentiation can sometimes be difficult on CT when only a single plane of view is available.

Because the craniovertebral junction is parallel to the axial plane it is often difficult to evaluate this region with axial CT scanning. Frequently in the past, metrizamide studies of this region had to be performed in order to diagnose abnormalities such as Chiari malformations. Through the use of sagittal images of the craniovertebral junction Chiari malformations (Fig. 6) can be easily

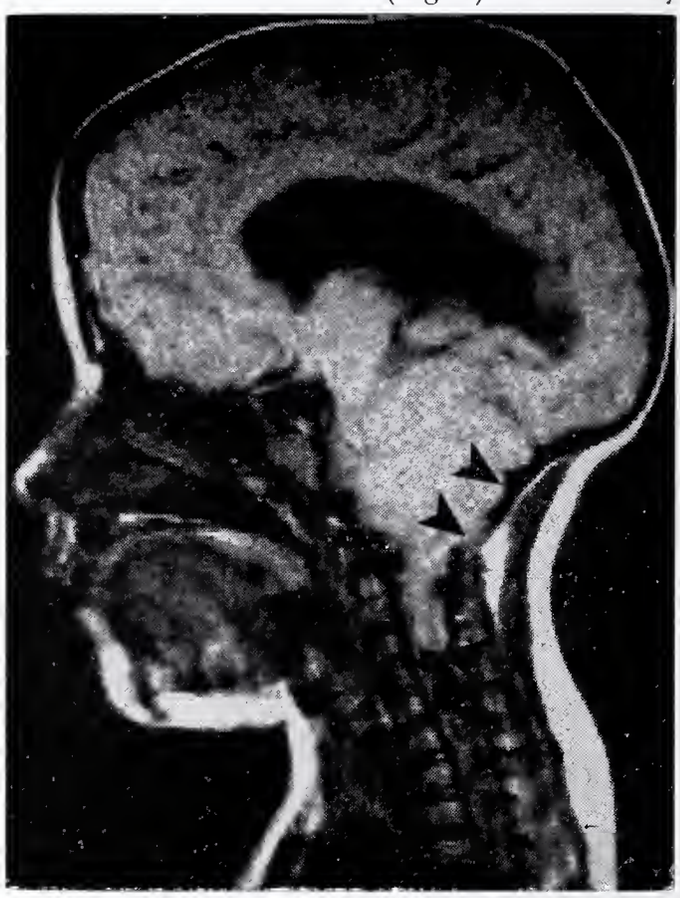


Figure 6.

Arnold Chiari malformation and cervical cord syrinx. Six-year-old with a lumbar meningiomyelocoele. Gradual onset recently of upper extremity paresis, a new finding. 0.35 TESLA Sagittal M.R.I. scan; T1 weighting (T.R. 0.5, T.E. 35). Note the long T1 of the fluid within the cervical syrinx (arrows) also note the extension of the cerebellum (arrowheads) into the cervical spinal canal, as well as the hydrocephalus. The M.R.I. scan was accomplished in 45 minutes completely noninvasively on an out-patient basis. Other methods of acquiring this same information on this patient would require hospitalization with relatively more invasive general anesthesia, myelography, and C.T. scanning.

diagnosed on an out-patient basis with MRI.[10] Other types of pathology at the craniocervical junction are also well depicted on the sagittal view (Fig. 7).

Spine

A great deal of the normal anatomy of the spine can be appreciated on MRI. The marrow in the vertebral bodies is displayed as a fairly intense signal due to the fat content of the bone marrow. Cortical bone has a very low mobile proton density, and therefore it returns very little signal. The pedicles can be identified due to the bone marrow within the pedicle. The intervertebral foramina can be seen between adjacent pedicles. These foramen are filled with epidural fat and the nerve roots can be identified within the fat. On non-T2 weighted images bright signal of the spinal cord is directly visualized and can be separated from the low signal of the surrounding C.S.F. However, on T2 weighted images the long T2 of the C.S.F. creates bright signal so that the signal of the C.S.F. and the spinal cord blend together; although the thecal sac is well seen on T2 images, the spinal cord and C.S.F. cannot be separated. The T2 image somewhat resembles the picture of a positive contrast myelogram, and indentations into the thecal sac—such as might be seen in a herniated disc become readily apparent.

The normal nucleus pulposus within an intervertebral disc shows progressively increased signal as one progresses from a T1 weighted image to a more T2 weighted image. With aging or degeneration of the disc there is a loss of signal from the disc on T2 weighted images. This reflects a loss of water content in the nucleus pulposus of the degenerated disc. Herniated discs will show evidence of degeneration with loss of signal on the T2 weighted image. MRI is extremely sensitive in detecting degenerated discs. However, the presence of degenerated disc does not necessarily imply herniation. When herniation does occur, often an indentation into the thecal sac can be seen on the T2 image. Evaluation of discal pathology has been especially helpful in the cervical spine,[11] an area where CT has been somewhat lacking. Early studies indicated that CT was



Figure 7-A.



Figure 7-B.

Rheumatoid arthritis with subluxation at C1-C2. 0.35 TESLA Sagittal M.R.I. scans are an excellent method for studying the craniocervical junction. A.) T1 weighted M.R.I. scan (T.R. 0.5, T.E. 35). Relaxation of the transverse ligament secondary to rheumatoid inflammation of the adjacent synovial joint has allowed subluxation of the dens (arrow) from the anterior arch of C-1 (curved arrow). Note pinching of the cervical spinal cord between the dens and the posterior lip of the foramen magnum. B.) T2 weighted image (T.R. 1.5, T.E. 70) demonstrates narrowing of the thecal sac (C.S.F. plus cord) at the craniocervical junction.

superior to MR in the detection of herniated lumbar discs. However, a more recent paper suggests that the ability of MRI to detect herniated lumbar discs approximates the accuracy of CT.[12] Certainly in a young patient when one is anxious to avoid ionizing radiation to the pelvis, an MRI scan may be useful in detecting lumbar disc pathology. The accuracy of MRI in detecting herniated discs should improve with further technological advancements. MR has also been shown to be very sensitive in the detection of disc space infection.

Spinal Cord

Intramedullary cord abnormalities, such as tumors or syrinx (Fig. 6), can be quickly evaluated in a non-invasive manner on an out-patient basis.[13] Similarly, extramedullary processes (trauma, tumor, disc) and their affect on the cord can be seen. Congenital abnormalities of the cord, such as diastematomyelia and lipomas, can also be demonstrated.

Chest

MRI has been utilized to evaluate diseases of the chest.[14,14A] It has proven to be particularly useful in the evaluation of diseases of the mediastinum, hilum, and heart. The mediastinum and hilum are well studied by MRI because of the high natural tissue contrast present in these locations. Mediastinal fat (strong signal) surrounds the trachea, bronchi, and vascular structures (low signal). Therefore, abnormal areas (intermediate signal) in the mediastinum and hilum are readily identified (Fig. 8). As opposed to CT scanning, no contrast media needs to be injected intravenously on the MRI studies.



Figure 8.

Hilar adenopathy. 1.0 TESLA Axial M.R.I. scan (T.R. cardiac gating T.E. 30). There is increased signal (arrow) in the left hilum. The abnormal signal can be distinguished from the "signal void" of fast flowing blood in the left pulmonary artery even though no iodinated contrast media has been injected.

Initially it was hoped that benign processes could be distinguished from malignant processes based on differences in MRI tissue characteristics. To date, this has not proved to be the case. However, mediastinal and hilar masses can be identified, and the extent of these masses can be fully appreciated by MRI due to the ability to obtain images in multiple planes.

Heart

Although it is still in its relative early stages of development, MRI of the heart holds great promise. The cardiac chambers, chamber walls, papillary muscles, and great vessels are routinely imaged with gated studies. Occasionally, the valves are also seen. MRI imaging has been used to evaluate congenital heart disease.[15] Septal defects, abnormal chamber size and wall thickness, and abnormalities of the great vessels have all been identified. Palliative shunt patency can also be determined with MRI.

Much of the work to date in evaluating ischemic cardiac disease has been performed in animals. In the animal models areas of myocardial ischemia do not show differences in signal intensity from adjacent normal myocardium. However, with the use of MRI contrast agents these areas of ischemia are readily identified.[16] Areas of acute and subacute myocardial infarction in animals demonstrate increased signal intensity on T2 weighted images due to the edema in these areas.[17] These findings have also been described in a small number of human patients.[17A] A variety of intramural, intracavitary, and pericardial masses have also been described.[18] The location of these masses is well delineated, and the effect that these masses have on the heart and adjacent structures is well demonstrated.

The normal pericardium is routinely visualized on MR images as a thin structure of decreased signal intensity.[19] Pericardial effusions and adhesions may also be observed. The heart chambers themselves may be visualized. Pericardial constriction can be suggested when there is enlargement of the right atrium with small ventricular volumes associated with the pericardial thickening.

Images of the heart are obtained in a well-defined portion of the cardiac cycle which can be changed by the physician monitoring the examination. Therefore, images can be obtained in diastole and systole. Currently, studies are being performed to evaluate MRI's ability

to evaluate cardiac volumes and wall motion abnormalities.

Pelvis

The normal anatomic structures in the pelvis are especially well delineated with MRI. Only axial views are available with CT scanning; coronal and sagittal MR scans better depict the musculature of the pelvic floor as well as the dome and base of the urinary bladder. Troublesome respiration and peristaltic motion artifacts which are seen in the abdomen are not a problem in the pelvis. The urine, the vessels, and the fat all afford natural MRI contrast. The lack of ionizing radiation can also be an important advantage in the young patient.

The normal prostate gland is homogeneous in appearance on MRI scans. It was initially felt that the glands which appeared inhomogeneous represented prostatic carcinoma in situ. However, further studies have demonstrated that prostate glands may also be inhomogeneous in prostatitis and in benign prostatic hypertrophy. Once a diagnosis of prostatic carcinoma has been established, the extent of the lesion can be well evaluated with MRI. Utilizing multiple planes of section, MRI is capable of demonstrating invasion of prostatic carcinoma into the periprostatic fat, bladder, and seminal vesicles.[24] The affects of prostatic enlargement (elevation of the bladder floor and bladder outlet obstruction) can be demonstrated with MRI (Fig. 9).

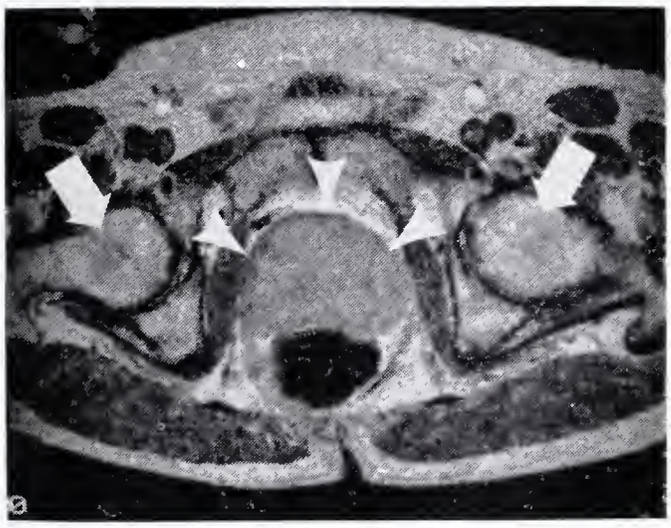


Figure 9.

Benign prostatic hypertrophy. 1.0 TESLA Axial MRI scan (T.R. 2.0, T.E. 30). Symmetrically enlarged prostate with homogeneous signal; fascial borders (arrowheads) with decreased signal are intact and surrounding fatty tissues with increased signal are normal. Also note the homogeneously smooth distribution of fatty marrow in the femoral heads (arrows).

The normal uterus emits 3 different signal intensities. The myometrium is of medium signal intensity, but it also shows a decrease in signal intensity as one goes from the fundus to the cervix. The endometrium gives a very bright signal intensity, which is accentuated on T2 weighted images. Commonly an area of decreased signal intensity can be seen separating the myometrium from the endometrium which is thought to represent the stratum basale. Uterine fibroids are easily demonstrated, and the affects that these masses have on adjacent structures is well seen. Endometrial carcinoma can be visualized as a pelvic mass.[25] The ovaries are inconstantly seen with MRI. A variety of pathologic processes of the ovaries such as ovarian cysts, cystadenofibroma, dermoid, endometrioma, and ovarian carcinoma have all been described.[26]

By varying the radiofrequency pulse sequences, the urine in the bladder can be separated from the bladder wall. Thus abnormalities of the bladder wall can be diagnosed. MRI appears especially promising in the diagnosis and staging of bladder carcinoma (Fig. 10).[26] Bladder carcinomas can appear as either focal thickening of the bladder wall or as a pedunculated mass. Imaging in the sagittal or coronal planes is particularly useful in diagnosing abnormal masses in the bladder dome and bladder floor. Perivesicle extension of tumor in adenopathy can also be demonstrated.

Abdomen

Unlike CT where scans can be obtained in a few seconds, it routinely takes at least a few minutes to perform an MRI scan. Because of this, respiratory motion, transmitted cardiac pulsations, and normal bowel peristaltic motion can cause significant artifacts on the MRI studies. Successful images of the liver and kidney are routinely obtained but images of the pancreas are less constant. In general no useful information is obtained from the bowel with MRI.

The normal liver parenchyma is seen as homogeneous medium signal intensity structure. The normal portal venous structures and hepatic veins are seen as areas of low signal intensity due to flowing blood. The normal intrahepatic biliary tree is not seen. The ability of MRI to detect focal liver abnormalities (cysts, primary liver tumors, metastases, etc.) appears to approximate CT.[20] However, MRI may give more information concerning the internal architecture of these focal lesions, and it also nicely demonstrates the relationship of focal liver lesions to the normal hepatic vascular structures. A recent study dem-

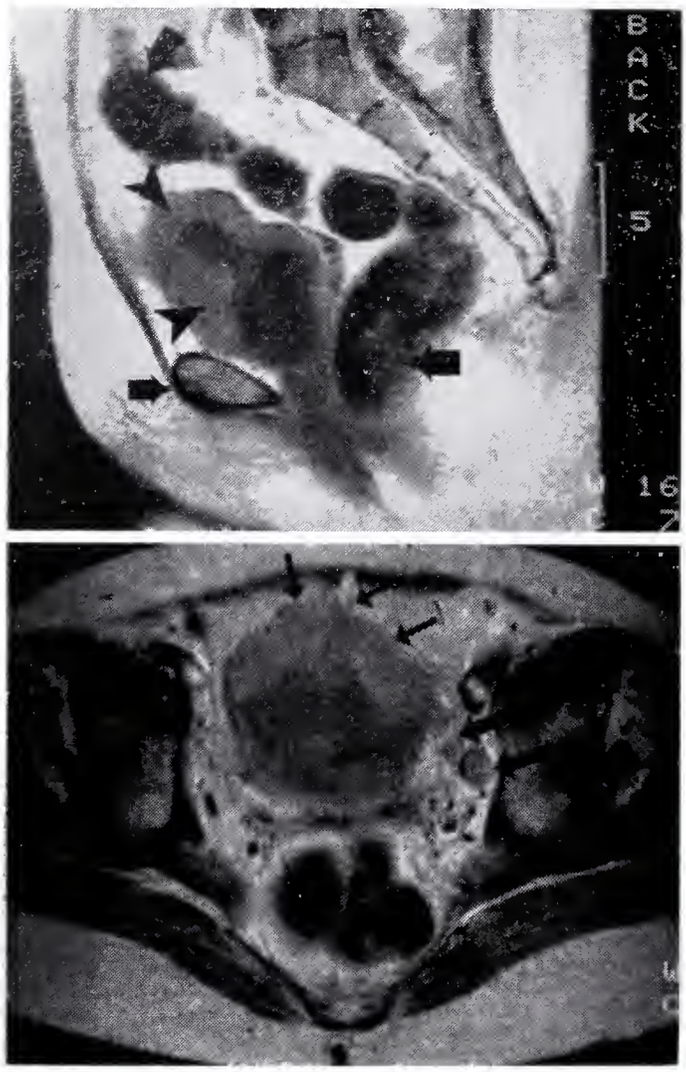


Figure 10.

Carcinoma of the bladder with perivesicle extension and lymphadenopathy. A.) 1.0 TESLA Sagittal M.R.I. scan (T.R. 2.0, T.E. 30). Note the irregular thickening of the dome and anterior wall of the urinary bladder (arrowheads). At these settings the urine is dark as is bowel gas (large arrows). Symphasis pubis (small arrow). B.) Axial M.R.I. scan (T.R. 1.5, T.E. 35) Irregular and indistinct margins between the bladder itself and the surrounding fat suggest perivesicular extension of the tumor (small arrows). Also note lymphadenopathy (large arrows) that was surgically proven.

onstrated that with proper manipulation of the radiofrequency pulsing sequences fatty infiltration could be appreciated.[21] Hemochromatosis has a very striking appearance on MR imaging with almost total lack of signal being seen in the liver. This is because the iron which is deposited in the liver in this disease state causes significant changes in the relaxation rates of the liver parenchyma.

On T1 weighted studies the renal cortex can be differentiated from the renal medulla routinely. This normal differentiation is lost in a variety of renal disease states such as acute or chronic renal failure, acute glomerulonephritis, and chronic obstruction.

The early clinical experience indicates that MRI will be useful in the evaluation of renal cell carcinoma.[22] Not only can the abnormal renal mass be identified (Fig. 11), but it is also possible to identify adenopathy as well as tumor thrombus within the renal vein or inferior vena cava. Sagittal and coronal images are quite useful in differentiating renal and suprarenal masses as well as in determining the extent of invasion into neighboring organs.

Magnetic resonance imaging has also been utilized in the evaluation of renal transplants.[23]

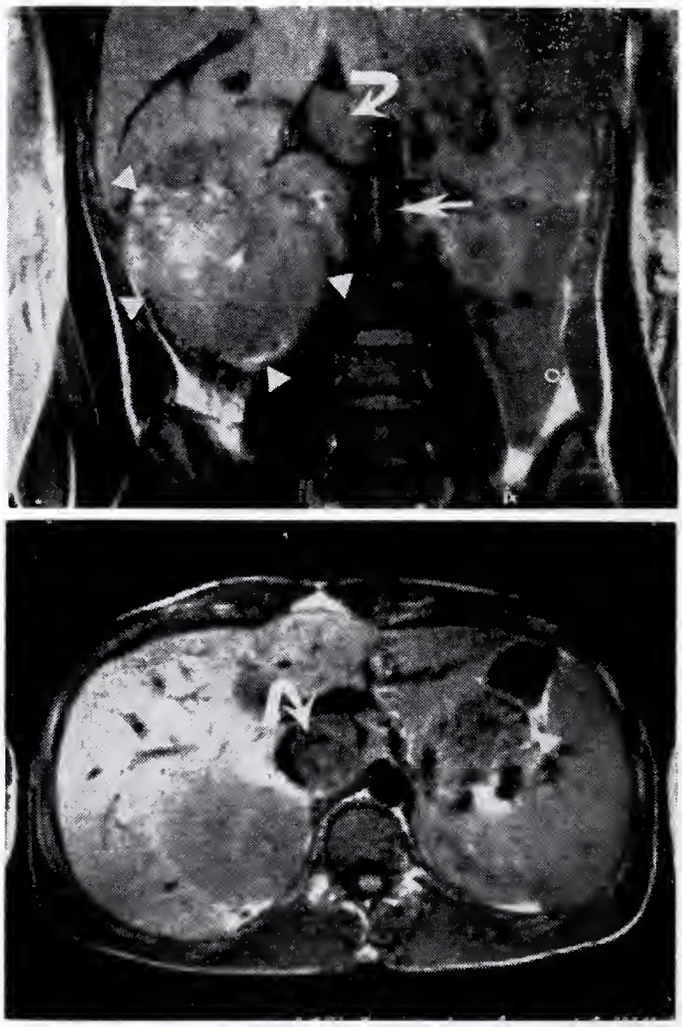


Figure 11.

Hypernephroma 1.0 TESLA. A.) Coronal M.R.I. scan (T.R. 2.0, T.E. 30). Large tumor involving the right kidney (arrowheads). Note the "signal void" of rapidly flowing blood in the aorta (arrow). Also note the thrombus within the dilated lumen of the inferior vena cava (curved arrow). B.) Axial M.R.I. scan (T.R. 2.0, T.E. 30) Thrombus is again seen within the lumen of the inferior vena cava (curved arrow). The dark crescent shaped structures on either side of the thrombus represent blood flowing around it.

Vascular

Rapidly flowing blood returns little or no signal on MRI images. Thus flowing blood acts as a natural contrast media, and no iodinating contrast media needs to be injected. This signal void within the vessel lumen sharply outlines the bright signal from the vessel wall. The walls of the normal vessel are smooth in appearance. Once again the ability to scan sagittal and coronal planes is often useful in studying vessels which lie predominantly in the vertical axis.

Atherosclerotic disease can be identified as areas of eccentric signal along the vessel wall.[27] It is hoped that MRI will be able to detect atherosclerotic disease at an early stage before morphological changes occur by showing abnormal signal within the wall of the vessel.

Early clinical studies have indicated that MRI can successfully image aneurysms.[28] MRI can accurately demonstrate the diameter of the aneurysm, show the internal lumen of the aneurysm, show atherosclerotic plaque in the aneurysm, and can also identify perianeurysmal fibrosis. More importantly, it appears that MRI can define the relationship of the aneurysm to both the renal arteries and the iliac arteries; this is quite important in planning the surgical approach.

MRI can also demonstrate aortic dissections.[29] With MRI the intimal flap can be identified, and it is also possible to appreciate relative flow in the 2 lumens (Fig. 12). MRI can demonstrate the relationship of the branch vessels to the 2 lumens. A potential shortcoming of MRI in the valuation of dissections is its inability to detect aortic insufficiency or extension of dissections into the coronary arteries.

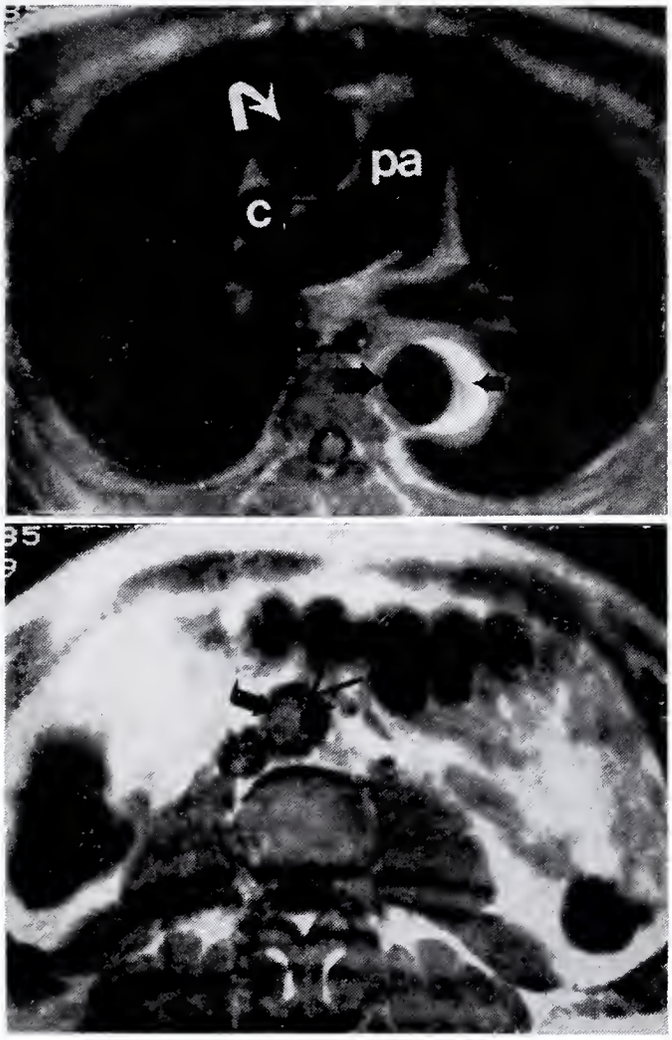


Figure 12.

Aortic dissection 1.0 TESLA. A.) Axial M.R.I. scan (T.R. cardiac gated T.E. 30) Thorax. Ascending aorta (curved arrow) is normal. Dissection of descending aorta. Increased signal in the false lumen (small arrow) is due to slow flow or to clot while there is a "signal void" in the patent true lumen (large arrow). P.A. = pulmonary artery. C = inferior vena cava. B.) Axial M.R.I. (T.R. cardiac gated, T.E. 30) abdomen. Again note the internal flap (thin arrow) with abnormal signal in the false lumen on the right (curved arrow).

MRI has also been useful to evaluate a variety of other vascular abnormalities. It has successfully imaged congenital abnormalities such as coarctation and azygos continuation, Marfan's disease and Takayasu's disease.

Bone and Soft Tissues

The appearance of cortical bone differs greatly from the appearance of marrow on MRI. Due to its low proton density, cortical bone emits little signal and appears dark on MRI scans. On the otherhand, bone marrow returns a very bright signal due to its high fat content. When the normal bone marrow is either replaced or altered by a disease process (tumor, infection, etc.), there is a decreased signal from the bone marrow.[30,31] MRI may well be more sensitive than nuclear scans in detecting avascular necrosis of the bone (Fig. 13).[33] In the long bones of the body, the sagittal and coronal views may better depict the overall pathologic process. The relation of the bony structures to adjacent muscle and other soft tissues is quite well seen on MRI scans.

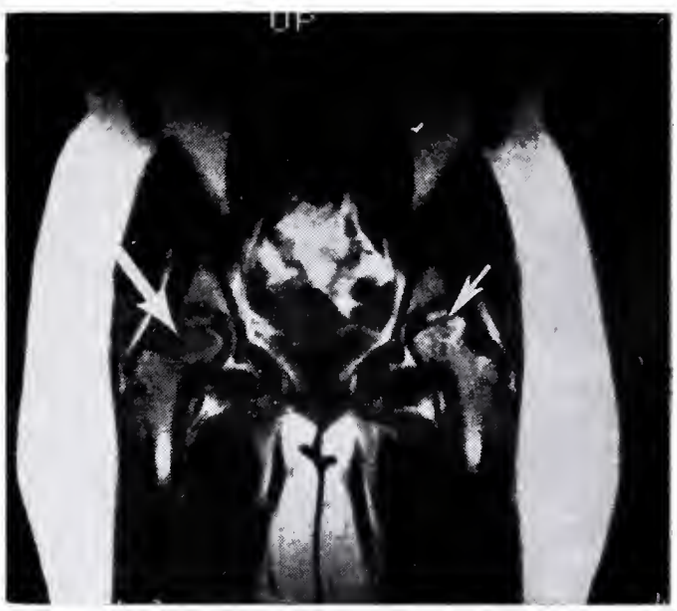


Figure 13.

Ischemic necrosis of the femoral heads 0.35 TESLA Coronal M.R.I. scan (T.R. 0.3, T.E. 35). This technique is very useful for the early detection of ischemic necrosis of bone. Normally there is an even distribution of fatty marrow within the bone (see figure 9). This patient was symptomatic on the right and had a positive bone scan on the right side only. Note the decreased signal from the right femoral head (large arrow) indicative of a marrow replacing process and compatible with ischemic necrosis. A similar but less marked change was also noted on the asymptomatic left side (small arrow). At surgery ischemic necrosis was found bilaterally.

MRI can be used to detect abnormalities of the soft tissues. Clinical studies indicate that MRI

imaging may be useful in evaluating indeterminate breast masses discovered on mammography.[32] Currently, clinical trials are investigating the efficacy of MRI in evaluation of diseases of the thyroid, parathyroid, and larynx. There may be some applications for MRI in joint disease as well.

FUTURE CONSIDERATIONS

One disadvantage of MRI is its relatively long scan time. A typical MR examination lasts between 30 and 90 minutes. Methods are currently being developed to decrease these scan times. Since the introduction of MRI, rapid strides have been made in improvement of image quality. There is a great deal of active research in developing surface coils which are specialized antennae to improve signal detection in various parts of the body. Additionally, methods are also being developed to quantify blood flow in the vessels. Another very interesting aspect of MR is spectroscopy. Spectroscopy has been used to determine the biochemical makeup of various substances in chemistry laboratories for decades. In the not too distant future we should be able to evaluate the biochemistry of various lesions of the body in vivo. Data thus obtained should give important clues as to the etiology of a lesion, i.e., ischemia, neoplasia, etc.

CONCLUSION

The many different advantages of MRI over other techniques make this type of images especially promising. The MR soft tissue contrast resolution (ability to distinguish one type of tissue from another) is significantly better than CT or ultrasound. Many pathologic entities that are not demonstrated on CT or ultrasound studies are visible on MRI scans. Also, the ability to obtain images in the direct sagittal, coronal, or oblique projections—without moving the patient to uncomfortable positions—can offer a big advantage when scanning certain parts of the body (posterior fossa of the brain, pelvis, extremities). On MRI scans flowing blood acts as its own natural contrast agent, and no iodinated contrast media needs to be injected to visualize vessel or chamber lumens.

All of these advantages are accomplished without any biologic harm to the patient. No ionizing radiation is utilized. This makes the MR study an ideal method for out-patients; in fact a needless hospitalization might well be avoided. Because of the increased sensitivity of MR, it could well replace other studies that might have been included in the medical work-up. Such factors could lead to an overall reduction of the total medical bill.

Thus, it is quite apparent that MR is an extremely powerful diagnostic tool. We are still in a rather early stage of its development. But even so, it has already made a significant impact on the work-up of many medical problems. There is no doubt that new technologic advances will take place within this field of imaging that will increase its medical applications far beyond those already discussed.

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EDITORIAL

New Places, Old Faces

Alfred Kahn, Jr., M.D.

"The Heart – An Endocrine Organ (Revisited)" is the title of an interesting article by Edward D. Frohlich (Archives of Internal Medicine, Volume 145, Page 809, May 1985). In this article, the author projects some interesting facts which indicate that the heart is an endocrine organ, in the broad sense of the word. He credits Braunwald as earlier making this association on the basis of the heart and nerves which enervate it having the ability to manufacture and release catecholamines. Frohlich's brief article concerns the fact that there seems to be a substance produced in the cardiac atrium which is capable of acting as a diuretic—causing the loss of water and sodium from the body. In this interesting essay, the known information that the excretion of sodium and water is due to two important causations; one is the hormone aldosterone, and the other is the glomerular filtration rate. Frohlich states that there appears to be a so-called "third factor" involved in sodium excretion. He characterized this "third factor" as being ouabain-like, and it is said to not only "restore intravascular volume but also to inhibit the sodium-for-potassium exchange mechanism." The factor is said to involve the so-called active-transport sodium pump which ultimately involves calcium which, in turn, acts on vascular smooth muscle. Frohlich identifies still another substance which he describes as a natriuretic factor—perhaps this ought to be called a "fourth factor". In any event, it is different from the factor described above and is said to be present and identified as a granule in the atrial muscle cells. These granules, when biochemically obtained, are said to cause diuresis and loss of sodium. The substance has been called atrial netriuretic factor (ANF). ANF is said to be dissimilar from the so-called "third factor" noted above. It is definitely not digitalis-like chemically; it has different physiologic effects in the body from the so-called "third factor". These substances described in Frohlich's editorial provide a basis for a better understanding of some of the physiologic accompaniments of cardiac incidence, one of which Frohlich cites—for example, there is a profound diuresis following paroxysmal atrial tachycardia which may be due to ANF.

Just as the heart is not ordinarily thought of as an endocrine organ, ketoconazole is not ordinarily thought of as an endocrine drug. David A. Stevens has published an article entitled "Ketoconazole Metamorphosis" (Archives of Internal Medicine, Volume 145, Page 813, May 1985). He states that ketoconazole was originally administered as an anti-fungal drug, but it now appears that ketoconazole has some endocrine effects. The author reports that in giving ketoconazole, gynecomastia appeared in several male patients. This lead to the investigation of ketoconazole in an experimental manner by several physicians. Ketoconazole induced a decided drop in the testosterone level. As a consequence of this finding, Stevens reports that adrenal corticoid synthesis was studied, and it too was found to be blocked. It is further reported in Stevens' editorial that ketoconazole took effect on the steroidogenic target cell. Quantitative, as well as qualitative, studies were performed with ketoconazole, and it is said that it requires large doses of the drug before manifestations of male hypogonadism and hypoadrenalism occurred. The author actually suggests that ketoconazole may be an ideal drug for the treatment of some endocrine disorders. For example, prostate cancer in which serum acid phosphatase is said to show a dramatic fall within a day after commencing ketoconazole treatment—and less "feminizing" effects were noted.

Shepherd, Hoffert, Evans, Emery and Trachten-

berg published a paper entitled "Ketoconazole—Use in the Treatment of Ectopic Adrenocorticotrophic Hormone Production and Cushing's Syndrome in Small-Cell Lung Cancer" (Archives of Internal Medicine, Volume 145, Page 863, May 1985). The authors state that one in five cancers of the lung are so-called small-cell lung cancers, and they are capable of synthesizing certain hormones as ACTH. These authors had a 56-year-old man who has a small-cell lung carcinoma which was treated with ketoconazole. They obtained a decrease in urinary cortisol and ketosteroids. The use of ketoconazole did not have any important bearing on the progress of the malignancies, but it did help control a very troublesome side effect. New uses for established drugs are found from time to time, and ketoconazole is a good example of such.



Address to the Council of the Arkansas Medical Society

Mr. Winslow Drummond, President,
Arkansas Trial Lawyers Association*

I appreciate having had the opportunity to visit personally with the members of your Council on September 22 and to follow up with this particular publication. As professionals, we serve the public through our respective disciplines, and to this extent our mutual interests and concerns, rather than our differences, deserve repeated emphasis.

In two significant respects there can be no interprofessional disagreement. First, the professional liability premiums being paid by medical care providers are so high as to merit legislation requiring investigation and disclosure beyond a submission and cursory review of a carrier's "filings" with the Insurance Commissioner. And second, there are too many non-meritorious suits being filed against physicians.

The wedge between doctors and lawyers is being driven by the insurance industry. A doctor's request of a carrier for an explanation about increased liability premiums will evoke a response identifying lawyers and lawsuits as the cause. Even the ninety-five plus percent of lawyers who have never contemplated the filing of a medical malpractice claim find a purely social encounter with doctors to be guarded. Anyone familiar with the liability insurance industry is aware of the games that can be played with reserves in order to affect tax liabilities or premiums rates or both. Legislation permitting the Insurance Commissioner to conduct full-scale investigations of rating procedures is the only means of establishing whether the legal profession is indeed a culprit deserving of the medical profession's anger and whether current premium rates are indeed justified.

You may be perhaps surprised but certainly delighted to learn that professional liability insurance premium rates for lawyers are escalating at an unprecedented rate. The group carrier for the Arkansas Bar Association will increase premiums charged to attorneys by 78% on October 1. Another carrier has increased its rates by 295% in 1985. Why? Lawyers have more recently shown little reluctance to represent clients who have sustained damage by reason of the negligence of an attorney. Just as doctors know that medical malpractice occurs, we lawyers know that we too are not free from error. Trained in knowledge of the litigation process, we are better able to accept with some degree of understanding the filing of an action against one of our own. (I doubt that physicians will ever be able to treat service of a summons as anything less than the descent of the guillotine blade.)

As lawyers, we do not respond to the increasing number of suits against us by attempting to legislate away the aggrieved client's right of recovery or the amount of recovery. That approach merely shifts responsibility for professional wrongdoing to the person who has suffered harm at the hands of the wrongdoer. And that's not professional. If lawyers are concerned about their liability premiums, they should see that their profession is cleansed of incompetency and must be willing, if necessary, to provide expert testimony against professional colleagues who have failed to meet acceptable standards of practice. Legal malpractice suits in Arkansas are frequently settled and, when tried, do not require expert testimony by an out-of-state attorney. If necessary, we are willing to go to bat against one of our own, motivated by a desire to see justice done and professional standards preserved. Invariably the defendant attorney bears no ill will toward the expert witness testifying for the plaintiff client.

I would urge that Arkansas physicians attempt to emulate the approach taken by lawyers to legal malpractice litigation. Specifically, I would like to see doctors in this state manifest a willingness to consult candidly with lawyers about the merits of claims and to testify, if necessary, even if their opinions may be adverse to a professional colleague. Admittedly, this may be difficult in terms of continuing professional relationships. But, on the other hand, even the expression on the part

*c/o The McMath Law Firm, P.A., Post Office Box 1470, Little Rock, Arkansas 72203.

of a physician that he may be willing to do this could lead to realistic settlement discussions prior to the filing of any lawsuit and, most importantly, could enhance standards of medical practice. Too often lawyers can elicit an "off the record" medical opinion that a particular doctor may have been negligent, only to find that that opinion is ultimately useless because the physician rendering that opinion does not want to "get involved." Lawyers on both sides of the table respect the courageous physician who is willing to take the unpopular position in criticizing a professional colleague while supporting a claim of a patient of that colleague.

A malpractice claim or suit against any professional—physician, lawyer, accountant, engineer, etc.—cannot be prosecuted if baseless. A "bad result" in a legal matter does not establish actionable negligence on the part of the lawyer on the short end of the stick. And yet, there are still too many of us ready and willing to haul off and sue a doctor because of a patient's dissatisfaction with a medical result or the doctor's "attitude." As lawyers, we can evaluate a legal malpractice claim. As lawyers, we need to learn again and again that only the opinion of a medical expert is determinative of the validity of a medical malpractice claim. Even when negligence may be apparent, a medical opinion may be essential to establish proximate causation. It behooves all of us to proceed cautiously, taking that long, hard look at every case before embarking on the prosecution of a non-meritorious claim or suit.

Many claims are generated by little more than a breakdown in communications between doctor and patient. I personally receive an average of five inquiries a week about medical malpractice matters and, at most, will find one in twenty worthy of even preliminary screening. And of those subjected to more careful scrutiny, only one in two will prove worth pursuing further. All too often, the complaining patient or his referring lawyer can only point to a breakdown in communications between the physician and the patient or the patient's family. A simple expression of personal concern or even an apology (not an admission of legal liability) by the doctor would result in fewer phone calls and personal visits to lawyer's offices.

In addition, I would urge you to demand better service from your liability insurance carriers, some of whom I represented off and on over a period of 25 years. Arkansas law requires that medical care providers be given advance notice of 60 days before a suit can be filed. The purpose of that law, which was enacted at your request, is to afford ample opportunity for investigation, evaluation, and possible settlement of claims before suit is filed with its attendant embarrassment. Unfortunately, in my experience, the notice letter to the doctor is forwarded, in turn, to his carrier. The carrier then writes to me, requesting a medical authorization for execution by my client (your patient) in order to secure medical records, etc. And that's the end of the matter. The 60 days will expire without further communication, forcing the lawyer in the interest of his client to file suit. We don't do this to embarrass anyone. Rather, we would welcome the opportunity to utilize the 60 days or even to extend the waiting period, if possible, in order to have the opportunity for open and complete discussion of a claim even if this results in an outright denial of the claim.

A doctor's patient is a lawyer's client. The patient and the client deserve competent, professional service. Whether patient, client, or customer, a member of the public is entitled to non-negligent handling of his affairs and to compensation if he suffers damage due to negligent wrongdoing. While self-interest dictates that we mitigate the cost of our liability insurance, we cannot deny remedies to our victims in order to satisfy that self-interest. As professionals, we must share the burdens imposed by reasons of our particular professional standards and common credentials, seeking as nearly as possible to assure the public whom we serve that our professions are peopled by competents and that the disciplinary and compensatory responsibility for occasional imperfections will be jointly discharged by our peers.

"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Journal of the Arkansas Medical Society
Vol. 6 No. 11 May, 1896 p. 516
The Arkansas Medical Society.

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Officers of the Society 1896-97.

President—A. J. Vance, Harrison.

First Vice Pres.—J. G. Eberle, Fort Smith.

Second V.P.—C. P. Merriwether, Walnut Ridge.

Secretary—F. Vinsonhaler, Little Rock.

Treasurer—J. H. Lenow, Little Rock.

Board of Censors—W. B. Welch, Fayetteville; D. C. Ewing, Batesville; A. A. Horner, Helena; T. J. Wright, Fort Smith; J. A. Dibrell, Jr., Little Rock.

Section on Practice of Medicine—W. N. Yates, Chairman, Fayetteville; F. W. Youmens, Secretary, New Lewisville.

Section on Surgery—H. P. Collings, Chairman, Hot Springs; W. R. Hunt, Secretary, Coal Hill.

Section on Obsterics and Gynecology—E. R. Dibrell, Chairman, Little Rock; K. A. McIntosh, Secretary, Beebe.

The *Place* of Meeting—Little Rock, Ark.

The *Time* of meeting—Second Tuesday in May, 1897.

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The Next Meeting of the Society.

Tuesday, May 11, 1897, has been designated as the time for the meeting of the society next year.

It has been the practice to arrange our meetings just prior to those of the American Medical Association so that delegates to the national association could attend both meetings with only one absence. The meeting of the American Medical Association for next year has been fixed for the first Tuesday in June. This is rather late for our climate and the summer sickness begins here about that time. So that all things considered about the middle of May is the best time for our meeting.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

MANAGEMENT OF THE NEWBORN OF THE DIABETIC MOTHER

Presented by Barry Allen, M.D., *December 17th, 7:30 p.m.,* Spavinau Supper Club, Gravette. One hour Category I credit. Sponsored by AHEC-NW.

ELECTROPHYSIOLOGIC TESTING—NEW LOOK AT CARDIAC ARRHYTHMIAS

Presented by Eleanor Kennedy, M.D., *December 20, 12:30 p.m.,* Springdale Memorial Hospital. One hour Category I credit. Sponsored by AHEC-NW.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC-South Arkansas.
Colposcopy-Pap Smear Clinic, fourth Tuesday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, second and fourth Thursday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.

Behavioral Sciences Conferences, first and fourth Friday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Gyn-Pathology Conference, second Friday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Pediatric Conference, second and third Friday, 12:30 p.m. to 1:30 p.m., (second Friday, Warner Brown Hospital, third Friday, Union Medical Center).

FAYETTEVILLE — AHEC-NORTHWEST
Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER
Pathology-Mortality Conference, second Thursday, 3:00 p.m., Conference Room, Building 1.
Radiology Conference, third Thursday, 1:00 p.m., Conference Room, Building 1.
ICU Lecture, second Friday, 1:30 p.m., Conference Room, Building 1.

JONESBORO — AHEC-NORTHEAST
AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL
Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pulmonary Conference, each Monday, 3:00 p.m., Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Genetic Conference, each Wednesday, 1:00 p.m., Annex Conference Room.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neuroscience Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
General Pediatric Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER
Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Surgery Conference, each Monday, 12:00 noon to 1:00 p.m., Conference Room #1.
Pathology Conference, each Thursday, 7:30 a.m. to 8:30 a.m., Pathology Library.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #2.

LITTLE ROCK — ST. VINCENT INFIRMARY
Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Pulmonary Conference, second Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES
Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interhospital GI Problems Conference, first Monday, 6:00 p.m., St. Vincent Infirmary, Classroom 3, Education Wing.
OB/Gyn Grand Rounds, each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/135.
Mental Health Services Grand Rounds, dates TBA, 10:00 a.m., Arkansas Mental Health Services Administration Building, third floor conference room.
Psychiatry Grand Rounds, each Thursday, 12:00 noon, UAMS Child Study Center Auditorium.
Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.

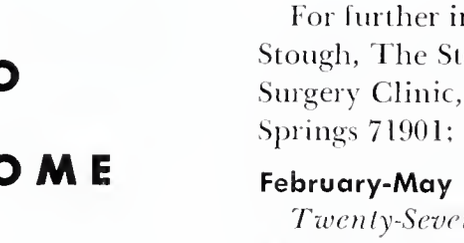
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Ed II Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS Ambulatory Care Center Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Ed II Building, Room G/135.
Arkansas Academy of Pathology, first Wednesday, 5:30 p.m., Coy's Restaurant.
Surgical Science Conference, each Saturday, 8:00 a.m., Ed II Building, Room G/131.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Psychiatry Service Lecture Series, each Wednesday, 1:00 p.m., NLRVA, Building 170.
VA Medicine Service Teaching Conference, each Monday, 3:30 p.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.

NORTH LITTLE ROCK — MEMORIAL HOSPITAL
Problem Case Conference, third Wednesday, 12:00 noon, Assembly Room, Memorial Hospital.

PINE BLUFF — AHEC
Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC-SOUTHWEST
Tumor Conference, November 6 and December 4, 7:00 a.m., St. Michael Hospital.
Chest Conference, November 20, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category 1 of the Physician's Recognition Award of the American Medical Association.



THINGS TO COME



1986

February 6-8

The Advanced Hair Replacement Surgery Symposium. Sponsored by the American Academy of Facial Plastic and Reconstructive Surgery. Majestic Hotel, Hot Springs. The program is accredited for 16 hours in Category I. Registration fee is $525 for AAFPRS members if received before December 31; $575 after December 31. Nonmember registration fee is $600 if received before December 31; $650 after December 31. Residents may register for $225. Fees include meals and social functions.

For further information, contact Dr. D. Bluford Stough, The Stough Dermatology and Cutaneous Surgery Clinic, P.A., Doctors Park Building, Hot Springs 71901; telephone 624-0673.

February-May 9

Twenty-Seventh Postgraduate Institute for Pathologists in Clinical Cytopathology. Johns Hopkins University School of Medicine. February-April, Home Study Course A, personal reading and microscopic study in personal laboratory.

April 28-May 9, In-Residence Course B. Concentrated lecture series, intensive laboratory, and vital clinical experience at the Johns Hopkins Medical Institutions, Baltimore, Maryland.

Courses designed solely for pathologists who are certified (or qualified for certification) by the American Board of Pathology or its international equivalent. 152 AMA Category I credit hours in both courses.

For further information, contact John K. Frost, M.D., 604 Pathology Building, The Johns Hopkins Hospital, Baltimore, Maryland 21205.

March 9-14

Diagnostic Imaging 1986: CT, Ultrasound, MRI and Emergency Room Radiology. Sponsored by The Radiology Research and Education Foundation and Extended Programs in Medical Education, University of California School of Medicine at San Francisco. 24 Hours Category I, AMA. Waiohai Hotel, Poipu Beach, Kauai, Hawaii. For further information, contact Dr. Vivian W. Wing, Assistant Professor of Radiology, San Francisco General Hospital, University of California School of Medicine, San Francisco, California.

April 17-20

Annual Session of the Arkansas Medical Society. Excelsior Hotel and Statehouse Convention Center, Little Rock.



PERSONAL AND NEWS ITEMS

DR. WALLER IN PINE BLUFF

Dr. Franklin W. Waller has joined the staff of the Jefferson Comprehensive Care Center as staff physician of the North Pine Bluff Clinic at 1124 West Pullen.

DR. GOZA GUEST SPEAKER

Dr. Gary Goza of Jonesboro spoke on "Neurological and Physical Changes in the Alzheimer Patient and Current Diagnostic Techniques, Treatment and Research" at a recent meeting of the Alzheimer's Disease Support Group.

DR. TAYLOR RELOCATES TO CARAWAY

Dr. G. Wayne Taylor, formerly of Jonesboro, has opened an office at 102A State Street in Caraway for the practice of Family Medicine.

DR. WILKES GUEST SPEAKER

Dr. David Wilkes of Little Rock discussed "Surgical Correction of Droopy Eyelids" at a recent meeting of the Jacksonville Lions Club.

NEWPORT GAINS PHYSICIAN

Dr. Edward R. Teitel, a General Surgeon, has joined the staff of the Newport Hospital Clinic at 2000 McLain.

DR. CAPES HONORED

Dr. Bernard Capes was honored posthumously at the 13th Annual Arkansas Mental Health Institute in recognition of his contribution to the field of mental health. Dr. Capes was one of the founders of the East Arkansas Regional Mental Health Center and had served since 1970 as its medical director. He had practiced medicine in West Helena since 1946.

DOCTORS PARTICIPATE

Dr. Ben Saltzman of Little Rock was a speaker at a conference, "For a Better Life: Health Promotion and the Older Adult", sponsored by the Arkansas Department of Health and the Arkansas Division of Aging and Adult Services. Dr. Stuart Fitzhugh of Little Rock served on the planning committee for the conference.

DR. STEADMAN OPENS NEW CLINIC

Dr. Hunter Steadman of Bentonville has opened a new office in Bella Vista. The facility is St. John's Medcenter affiliated with the St. John's Regional Medical Center in Joplin, Missouri.

DOCTORS PARTICIPATE IN CANCER PROGRAMS

Dr. Gareth Eck of Fayetteville presented an educational program on cancer to the Board of Directors of the South Washington County Unit of the American Cancer Society.

Dr. C. R. Magness of Fayetteville is president of the Unit; Dr. Eck serves as vice-president.

Dr. Malcolm Hayward of Fayetteville represented the South Washington County Unit at a meeting held in Fort Smith.

MEDICAL CENTER CONTRIBUTES TO SPORTS COMPLEX

The Searcy Medical Center donated $10,000 to a fund-raising campaign for the Searcy Sports Complex. Dr. Clark Fincher, president of the Medical Center, made the presentation to the chairman of the Searcy Parks and Recreation Commission. Other doctors who practice at the

Medical Center are Dr. Ronald Baker, Dr. Leon Blue, Dr. David Covey, Dr. Jim Citty, Dr. T. A. Formby, Dr. Jack Gardner, Dr. W. M. Gibbs, Dr. David Johnson, Dr. Michael Justus, Dr. John Sanders, Dr. Stan Schwartz, Dr. J. L. Stinnett, Dr. S. W. Tate, Dr. Jack Thomas, and Dr. William White.

DR. POOLE IS WINNER

Dr. Grover Poole of Jonesboro won the Arkansas State Golf Association's Senior Championship in a sudden death playoff in a tournament at the Country Club of Little Rock.

DR. CHESHIER IN FORT SMITH

Dr. James L. Cheshier, a Pediatrician, has joined the Holt-Krock Clinic in Fort Smith. He is a graduate of the University of Arkansas.

DR. SMITH HONORED

Dr. John McCollough Smith of Little Rock was honored by the Pulaski County Medical Society by having a medical school scholarship presented in his name. The County Society gives the scholarship annually to a freshman medical student from Pulaski County.

Dr. Smith was honored for more than fifty years of service to the Society and the community, particularly in the area of amateur athletics. Dr. Smith has been the team physician at Little Rock Central High School for more than fifty years.

The scholarship this year was presented to Lawrence H. Meyer of North Little Rock, who is a freshman at the University of Arkansas College of Medicine. The stipend covers tuition for one year.

DR. WILLIAMS APPOINTED TO STATE MEDICAL BOARD

Dr. Alonzo D. Williams, Sr., of Little Rock has been appointed to the Arkansas State Medical Board for a term to expire in December 1992. Dr. Williams fills the National Medical Association position on the Board. He is a Gastroenterologist with offices in the Freeway Medical Tower Building.

DR. COLEMAN AND SON PLAY IN U. S. OPEN

Dr. Mike Coleman and his son, Chris, of Fort Smith qualified to play in the U. S. Open by winning the father-son combination of the 11th Annual Equitable Family Tennis Challenge regional tournament in Memphis.

They won the first-round father-son doubles match of the U. S. Open.



NEW MEMBERS

DR. THOMAS W. ATKINSON

Dr. Atkinson, a native of El Dorado, has joined the Benton County Medical Society.

He received a Bachelor of Science degree in Zoology from Arkansas State University in 1975. He also attended the University of Central Arkansas. Dr. Atkinson is a 1981 graduate of the University of Arkansas College of Medicine. His internship and residency were with the Louisiana State University Medical Center in Shreveport. Dr. Atkinson served as chief medical resident for 1984-1985. He also served as Employee Health Physician at L.S.U. Medical Center. He is an associate member of the American College of Physicians.

Dr. Atkinson has joined the staff of the Siloam Springs Memorial Hospital at 205 East Jefferson for the practice of Internal Medicine.

DR. ROBERT C. ATKINSON

Dr. Atkinson has joined the Craighead-Poinsett County Medical Society. He was born in East Point, Georgia.

Dr. Atkinson received his pre-medical education at Southwestern University in Memphis, Tennessee, and Ohio State University in Columbus. He is a 1947 graduate of the University of Tennessee College of Medicine. His internship was with Hermann Hospital in Houston, Texas. Dr. Atkinson served a three year residency in Neurological Surgery at Baylor University Medical College in Houston. He was in training in Neurological Surgery for two years at Ohio State University Hospital in Columbus. He is board certified in

Neurological Surgery.

He served with the United States Air Force Medical Corps in Japan and Korea during the Korean War.

Dr. Atkinson was in general practice for five years in Ruleville, Mississippi, and for two years in Alvin, Texas. He practiced Neurological Surgery for twenty years in Columbus, Ohio, and for five years in Hilton Head Island, South Carolina. He has held teaching appointments at Baylor University Medical College and with the Section of Neurosurgery at Ohio State University. He is a Fellow of the American College of Surgery.

Dr. Atkinson practices Neurological Surgery at 520 Carson Street in Jonesboro.

DR. OWEN B. GILMORE

Dr. Gilmore, a native of Oklahoma City, Oklahoma, has joined the Crawford County Medical Society.

He received a Bachelor of Science degree in 1978 from Oklahoma State University in Oklahoma City. He is a 1982 graduate of the University of Colorado School of Medicine in Denver. Dr. Gilmore served his internship and residency with the University of Arkansas Area Health Education Center in Fort Smith.

Dr. Gilmore has joined the staff of Holt-Krock Clinic at 1500 Dodson in Fort Smith for the practice of Family Medicine.

DR. MYRIAM D. GILMORE

Dr. Gilmore has joined the Sebastian County Medical Society.

She is a native of Minneapolis and a 1975 graduate of the College of St. Catherine in St. Paul. She was graduated from the University of Minnesota Medical School in 1980. Her postgraduate training was with the University of Colorado School of Medicine and the University of Oklahoma Tulsa Medical College.

Dr. Gilmore practiced part time for one year at Waldron Place Pediatric Center. She is a Pediatrician for the Sebastian County Health Department. Dr. Gilmore is associated with Holt-Krock Clinic in the practice of Pediatrics.

* * * *

The Pulaski County Medical Society has five new members:

DR. GENE W. REID

Dr. Reid is a native of Leachville. He received Bachelor of Science and Master of Science degrees from Arkansas State University. He is a 1979 graduate of the University of Arkansas College of Medicine. Dr. Reid trained in Psychiatry at the University Hospital, the Arkansas State Hospital, and the Veterans Administration Hospital in Little Rock.

Dr. Reid was on the staff of the Veterans Administration Medical Center from 1983 to June 1985.

He practices Psychiatry at Suite 262, 1100 North University in Little Rock.

DR. R. LEE AUSTIN

Dr. Austin was born in Trenton, Tennessee. He is a 1944 graduate of Vanderbilt University in Nashville, Tennessee, and a 1947 graduate of Vanderbilt University School of Medicine.

Dr. Austin received Pediatrics training at the Case Western Reserve University Hospitals in Cleveland, Ohio, and at Children's Hospital East Bay in Oakland, California. He is certified by the American Board of Pediatrics.

He practiced in Fullerton, California, from 1952 to 1959, in Memphis, Tennessee, from 1959 to 1968, and in Oklahoma City, Oklahoma, from 1968 to 1985.

Dr. Austin specializes in Pediatrics at 1110 West Main Street in Jacksonville.

DR. THEODORE L. LEMLE

Dr. Lemle, a native of New Orleans, Louisiana, was graduated in 1974 from Fisk University in Nashville, Tennessee. He is a 1978 graduate of the Meharry Medical College in Nashville.

Dr. Lemle received training in Surgery from 1978 to 1983 at Meharry Medical College. He also trained in Cardiac and Vascular Surgery with the Arizona Heart Institute in Phoenix from 1984 to 1985.

Dr. Lemle practices General and Vascular Surgery at 5800 West Tenth in Little Rock.

DR. ANN W. MANERS

Dr. Maners was born in Rock Hill, South Carolina. She is a 1973 graduate of Furman University in Greenville, South Carolina, and a 1980 graduate of the Medical College of South Carolina in Charleston. She trained in Clinical Pathology from 1980 to 1981 and in Radiation Therapy from 1981 to 1985 at the Medical College of South Carolina.

Dr. Maners is an Assistant Professor with the Division of Radiation Oncology at the University of Arkansas College of Medicine. She is affiliated with CARTI in Little Rock for the practice of Radiation Oncology.

DR. PAUL E. VALENTIN-STONE

Dr. Valentin-Stone, a native of Minden, Louisiana, received his pre-medical education at the University of Puerto Rico. He is a 1977 graduate of the Escuela de Medicina Universidad Nacional Pedro Henriguez Urena in Santo Domingo.

He trained in Internal Medicine with the Mayaguez Medical Center in Mayaguez, Puerto Rico, for one year.

Dr. Valentin-Stone was on the staff of the Cannon Air Force Base Hospital in Clovis, New Mexico. He was stationed at Keesler Air Force Base in Biloxi, Mississippi, from 1981 to 1983 and completed a two-year residency in Internal Medicine.

Dr. Valentin-Stone is currently stationed at the Little Rock Air Force Base Hospital in Jacksonville for the practice of Internal Medicine. His mailing address is Post Office Box 5457, Jacksonville 72076.

RESOLUTIONS



DR. RALPH CRIGLER

WHEREAS, God in His infinite mercy has seen fit to call from our midst on the eleventh day of July 1985 Dr. Ralph Crigler, and

WHEREAS, Dr. Crigler had faithfully served his patients in the community at large throughout his entire medical career, and

WHEREAS, Dr. Crigler, during his years of practice, had reflected the highest ideals of his profession, and

WHEREAS, in his devotion to family, church, and friends, he exemplified the best in man, and

WHEREAS, the Sebastian County Medical Society mourns his loss

THEREFORE, BE IT RESOLVED, the Sebastian County Medical Society, in its regular meeting on October 8, 1985, hereby adopts these Resolutions and directs that a copy be spread on the Minutes of the Society and that a copy be furnished the family and that a copy be published in the Journal of the Arkansas Medical Society.

ADOPTED: Sebastian County Medical Society

DR. GEORGE L. MALLORY, JR.

WHEREAS, the members of the Pulaski County Medical Society note with sincere sorrow the recent death of an esteemed colleague, George L. Mallory, Jr., M.D., and

WHEREAS, he had been a loyal member of the Society for thirty-four years and had earned the respect of his fellow physicians for his devotion to the practice of his profession, and

WHEREAS, Dr. Mallory had served in positions of responsibility on the Society's Executive Committee and made many contributions of his time to the community service programs of the Society.

BE IT THEREFORE RESOLVED:

THAT, this resolution be adopted and made a part of the permanent archives of the Society, and

THAT, a copy of this resolution be sent to Dr. Mallory's family as an expression of our heartfelt sympathy, and

THAT, a copy be sent to the Journal of the Arkansas Medical Society for publication.

ADOPTED: Pulaski County Medical Society
Executive Committee

OBITUARY

DR. MARTHA M. BROWN

Dr. Martha Brown of Little Rock died October 6, 1985. She was born October 16, 1901, in Walnut Grove.

Dr. Brown was a graduate of the Little Rock Junior College and the University of Arkansas at Fayetteville. She was a 1940 graduate of the University of Arkansas School of Medicine. Her internship was with the University Hospital.

Dr. Brown was the second woman to practice Psychiatry in Arkansas. She joined the staff of the

Arkansas State Hospital in 1941 and remained on the staff there until her retirement in 1964.

She is survived by a brother and sister.

DR. WILBUR G. LAWSON

Dr. Lawson of Fayetteville died October 3, 1985. He was born September 12, 1926, at Williford (Sharp County).

Dr. Lawson attended Hendrix College in Conway. He was a 1947 graduate of the University of Arkansas College of Medicine. His residency in Pediatrics was with Johns Hopkins University in Baltimore.

Dr. Lawson was an Assistant Professor and Head of the Pediatrics Department at the University of Arkansas College of Medicine in the early 1950's. He served as Chief of Pediatrics at the Army Hospital in New Orleans from 1953 to 1955. Dr. Lawson moved to Shattuck, Oklahoma, in 1955 and joined the Newman Clinic. He also served on the faculty of the University of Oklahoma and as Health Officer for Ellis County, Oklahoma.

Dr. Lawson moved to Fayetteville in 1960. He was a member of the staffs of the Fayetteville City Hospital and Washington Regional Medical Center Hospital, and was a consultant to Springdale Memorial Hospital and the Carroll County Hospital.

He was board certified in Pediatrics and a member of the Executive Council of the American Heart Association in Arkansas. Dr. Lawson was a member of the Phi Chi, the Benevolent and Protective Order of Elks, the Aircraft Owners and Pilots Association and the Flying Physicians Association. He was a Boy Scout leader.

Dr. Lawson is survived by his wife, Barbara Frey Lawson, one son, one daughter, two physician brothers—Dr. Larry Lawson of Paragould and Dr. Noel Lawson of Galveston, Texas—another brother and a sister.

DR. GEORGE L. MALLORY, JR.

Dr. Mallory of North Little Rock died October 2, 1985. He was born September 19, 1924, in Little Rock.

He attended Westminster College in Fulton, Missouri. He received a Bachelor of Science degree from the University of Arkansas at Fayetteville. Dr. Mallory was a 1950 graduate of the University of Arkansas College of Medicine. His internship was with Arkansas Baptist Hospital. He was board certified in Family Practice.

Dr. Mallory had been a member of the Sigma Alpha Epsilon and the Phi Chi fraternities. He served in the Navy during World War II and in the Air Force during the Korean War.

He had practiced in England from 1951 to 1953 and had been a member of the England Lions Club and president of the Lonoke County Medical Society. Dr. Mallory moved to North Little Rock in 1954. He was a deacon and elder of the Second Presbyterian Church.

Dr. Mallory had served as an instructor at the University of Arkansas College of Medicine from 1951 to 1958.

He is survived by his wife, Caroline Perry Mallory, his son Dr. John A. Mallory, and another son.

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Opportunities to Practice Medicine in Arkansas

PINE BLUFF. The Jefferson Comprehensive Care Center, Inc., in Pine Bluff and its satellite clinics in North Pine Bluff, Altheimer, Redfield, and College Station have salaried positions open in the areas of family practice, general practice, internal medicine, and pediatrics. The well equipped North Pine Bluff Clinic is a 2,440 square foot facility with 8 examination rooms, has a user population of approximately 5,000 and is approximately 5 miles from Jefferson Regional Medical Center. The hours of practice are 40 hours per week with inpatient care, off hours and emergency room coverage. The Altheimer satellite is 14 miles northeast of Pine Bluff and has adequate space for two physicians and includes lab and x-ray facilities. The Redfield satellite is approximately 20 miles south of Prime Center in Pine Bluff. It has offices for two physicians, one nurses station, reception area, x-ray room and laboratory. The College Station satellite is currently undergoing extensive renovation and when completed will have two examining rooms, reception area, x-ray room, physician's office, and laboratory. College Station is a small rural community of 1,425 and located just outside the city limits of Little Rock.

MOUNTAIN HOME. Opportunities exist in Mountain Home in neurosurgery, family practice and ophthalmology. A neurosurgeon is needed to complement the active medical staff of 32 physicians. Most specialties both medical and surgical are represented in Mountain Home. Various financial incentives are available to physicians to relieve the pressure and burden of beginning a medical practice.

The community is served by the Baxter County Regional Hospital, Inc. which has J.C.A.H. accreditation. The hospital is a progressive institution not only in philosophy but in physical structure. Approval has been given to expand the 97 bed facility to approximately 135.

Mountain Home and Baxter County is located in the Ozark Mountains in northcentral Arkansas and have populations of approximately 10,000 and 29,000 respectively. Baxter County is the number one county in growth in population the last ten years with a 102% increase. During the winter months the trade population of the region is approximately 70,000 which soars to over 100,000 during the peak vacation periods.

HOT SPRINGS VILLAGE. Population 6,000; located 70 miles southwest of Little Rock and 15 miles north of Hot Springs. An opportunity exists for a general practitioner. This retirement resort area is currently served by two part-time general practitioners and an internist. Nearby Hot Springs has three fully accredited and equipped hospitals with a total of over 500 beds.

There is a need for physicians who are interested in less vigorous work or a semi-retired practice. This is an excellent area for mature physicians who are willing to work with mature patients.

RUSSELLVILLE. Opportunities are presently available in neurology and pediatrics. Located 75 miles west of Little Rock, Russellville has a service area of around 72,000. The fully accredited hospital has a broad range of services including a 12-bed intensive care unit, nuclear medicine, physical therapy, and many others. Currently over 16 medical specialties are represented by the medical staff. If needed, American Medical International can provide financial assistance to the relocating physician.

SEARCY. Population 13,000; service area approximately 50,000. Searcy is 45 miles from Little Rock. Physician is interested in securing a junior partner in a well established family practice clinic. Excellent opportunity for a young physician to step into a very busy practice in a fully equipped, well organized clinic. Salary is negotiable.

Central Arkansas General Hospital in Searcy is a 136-bed fully accredited, general acute care hospital which has a full range of medical and surgical services.

SPRINGDALE. Located in northwest Arkansas, Springdale has a population of 27,000 with a primary trade area population of 50,000. Opportunities exist in the fields of general practice, internal medicine and pediatrics. Community physicians are actively supporting the recruiting efforts and are willing to discuss opportunities in Springdale with interested physicians. There is 205-bed modern, accredited hospital in Springdale. Excellent housing and office space are also available.

For more information, contact the Physician Placement Service, Arkansas Medical Society, Post Office Box 1208, Fort Smith, Arkansas 72902.

Opportunities to Practice Medicine in Arkansas

DARDANELLE. Population 4,000; county population 14,000. Dardanelle is located in Yell County approximately 4 miles from Russellville and 80 miles west of Little Rock. The opportunity exists for a family practitioner and an obstetrician/gynecologist to join a group of three family physicians. A four-day work week is regularly scheduled. Night and weekend work is on a rotation basis. The clinic building is approximately 12 years old and the group owns property for possible future use.

There is a 43-bed general hospital in Dardanelle and a larger hospital in Russellville. Specialists representing over 16 medical specialties practice in Russellville.

DeQUEEN. The Community Hospital of DeQueen is offering a guaranteed income incentive for certain physicians wishing to practice in DeQueen—internists, obstetricians/gynecologists, orthopaedic surgeons and urologists. Community Hospital of DeQueen is modern, well equipped and serves an area of four counties with a population of approximately 60,000.

DUMAS. Population 7,000 with a trade area population of 30,000. Seven physicians now practice in Dumas and are aiding in the effort to obtain additional general and family practitioners, an internist, an obstetrician/gynecologist and a pediatrician. New ultra modern facilities are near the 50 bed hospital. Dumas is 40 miles from Pine Bluff and 80 miles from Little Rock.

GURDON. Population 2,700; service area 6,000. An excellent opportunity exists in family practice. The community has a fully staffed and equipped clinic available adjacent to the 28 bed Gurdon Municipal Hospital. A new, modern inpatient facility was dedicated in 1984 and the community has a 65 bed nursing home and local ambulance service. Timber and timber related industries are the primary source of income. The International Paper Company recently completed a 30 million dollar expansion creating several new jobs in the area.

HARTFORD. Population 700. Opportunity exists in family practice or general practice and geriatrics in this community which has a trade area population of approximately 7,500. There are currently no physicians serving in Hartford, which is located 30 miles south of Fort Smith. There exists a newly constructed 16 room clinic which is partially furnished.

HOPE. Practice opportunities exist in Hope in the fields of orthopaedic surgery and radiology. Located in southwest Arkansas, Hope has a population of 11,000.

Medical Park Hospital is a 75-bed general acute care facility serving Hope and the surrounding communities. The hospital is a full service health care center with a comprehensive range of medical/surgical services including 24 hours a day emergency service with full-time physician coverage on weekends. Other services include intensive/coronary care, nuclear medicine, physical therapy, and ultrasound. Specialties currently represented include gynecology, urology, pediatrics, internal medicine, pathology, radiology, orthopedics, and family practice.

LAKE VILLAGE. Lake Village, located in southeast Arkansas, has a service area population of approximately 84,000. County population 18,000. An excellent practice opportunity exists for an obstetrician/gynecologist. Currently the nearest obstetrician/gynecologist is located in Greenville, Mississippi, approximately 20 miles away. The next nearest obstetrician/gynecologist is located in Pine Bluff, Arkansas, 1½ hours travel time from Lake Village. Last year there were 271 births at Chicot Memorial Hospital all delivered by family practice physicians.

The area is served by the Chicot Memorial Hospital located in Lake Village which has 80 acute care beds and is equipped with all services usually found in a facility of its size including CT scanning and nuclear medicine.

PARAGOULD. Population 15,000; trade area 50,000. Paragould is located in Greene County in northeast Arkansas. Opportunities now exists with Paragould Medical Center and other groups in the following specialties: dermatology, family practice, internal medicine and otorhinolaryngology. The city and county is served by a 129 bed non-profit community operated hospital with full facilities including sonograph, gamma camera, cobalt therapy unit and a CT scanner. The latest hospital expansion in 1980 doubled the floor space of the institution. Paragould currently has approximately 25 physicians.

For more information, contact the Physician Placement Service, Arkansas Medical Society, Post Office Box 1208, Fort Smith, Arkansas 72902.

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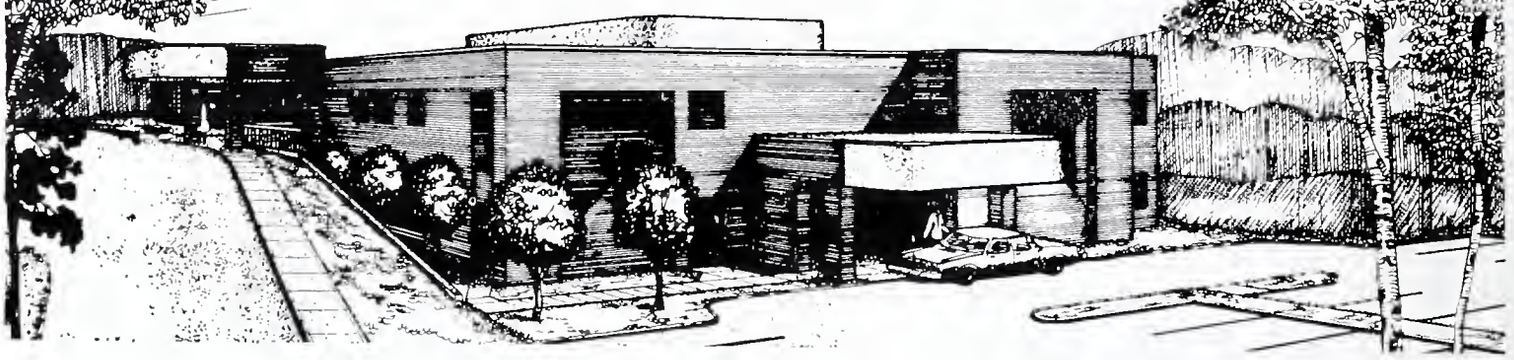
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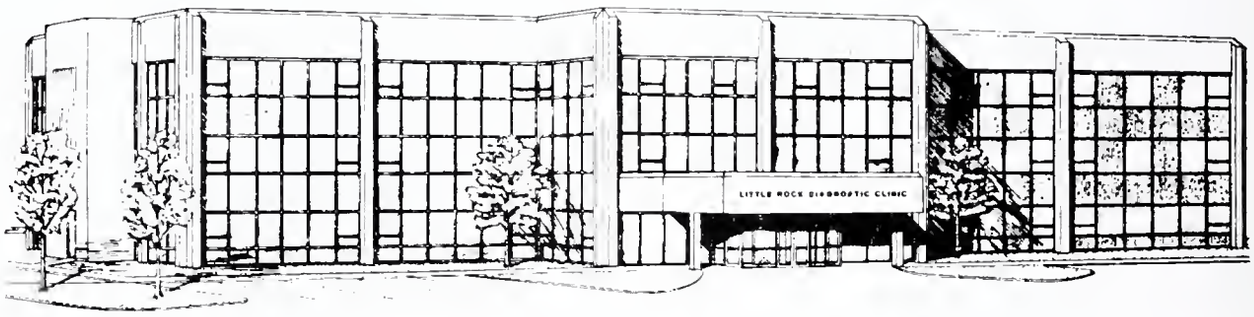


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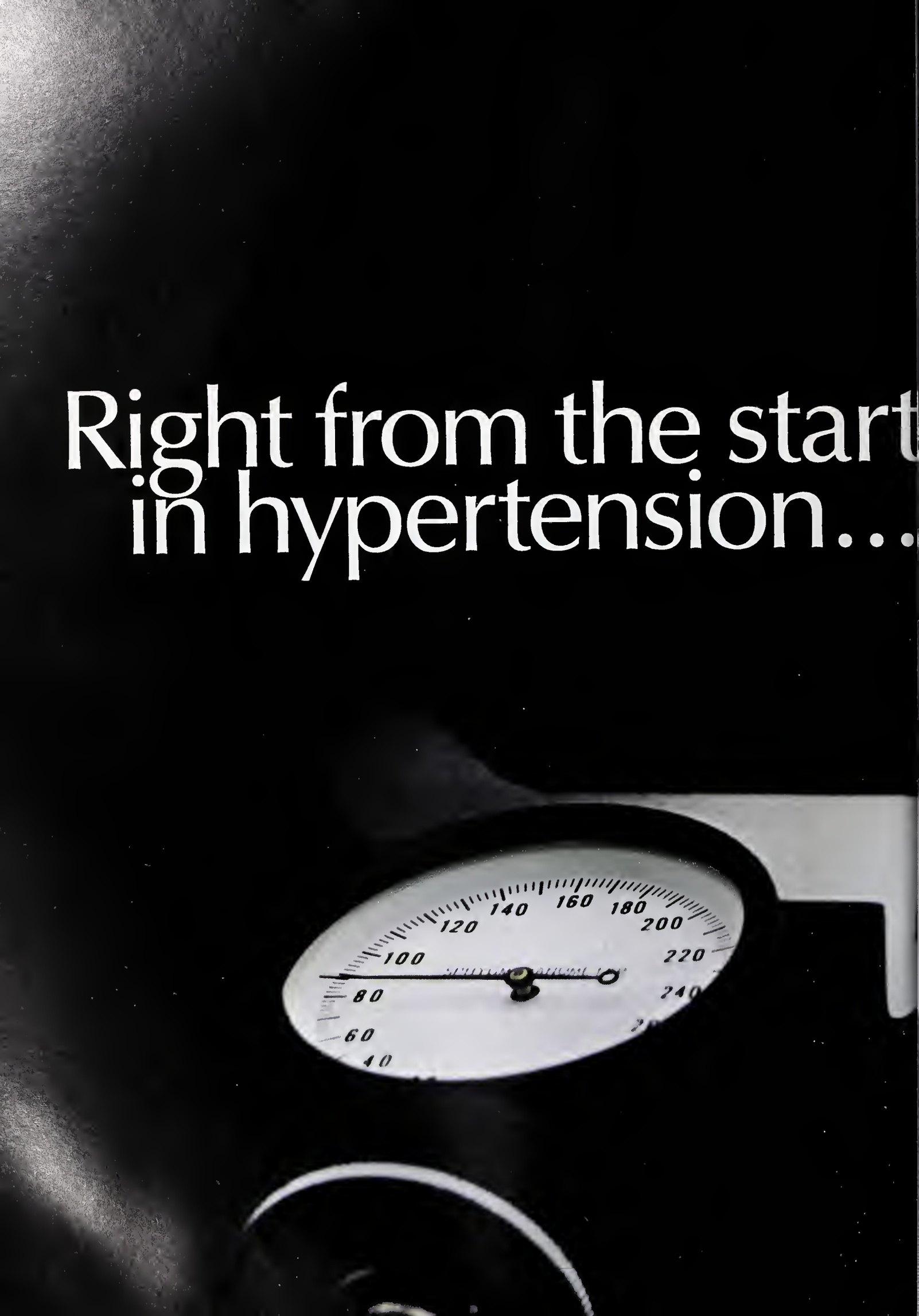
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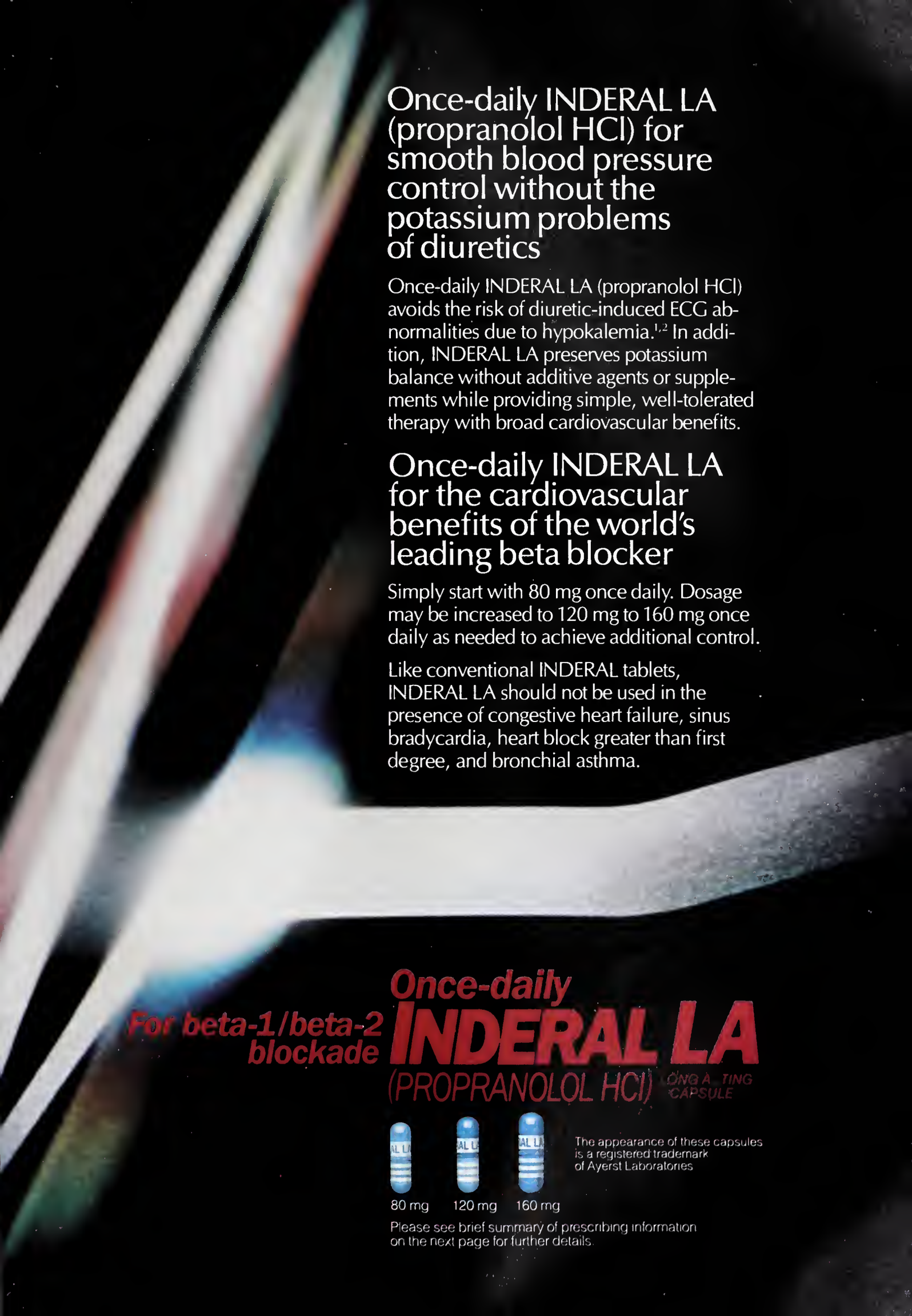
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Once-daily INDERAL LA (propranolol HCl) avoids the risk of diuretic-induced ECG abnormalities due to hypokalemia.[1,2] In addition, INDERAL LA preserves potassium balance without additive agents or supplements while providing simple, well-tolerated therapy with broad cardiovascular benefits.

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Simply start with 80 mg once daily. Dosage may be increased to 120 mg to 160 mg once daily as needed to achieve additional control.

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For beta-1/beta-2 blockade

Once-daily

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(PROPRANOLOL HCl) LONG ACTING CAPSULE

80 mg 120 mg 160 mg

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Please see brief summary of prescribing information on the next page for further details.

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BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)*

INDERAL® LA brand of propranolol hydrochloride **(Long Acting Capsules)**

DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. INDERAL is a nonselective beta-adrenergic receptor blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of sympathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly diafyzable.

INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. CARDIAC FAILURE: Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA: Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. *General:* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy: Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose. There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia, congestive heart failure, intensification of AV block, hypotension; paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System: lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized.* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized.* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized.* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

REFERENCES

1. Holland OB, Nixon JV, Kuhnert L: Diuretic-induced ventricular ectopic activity. *Am J Med* 1981;70:762-768. **2.** Holme I, Helgeland A, Hjermann I, et al: Treatment of mild hypertension with diuretics. The importance of ECG abnormalities in the Oslo study and in MRFIT. *JAMA* 1984;251:1298-1299.

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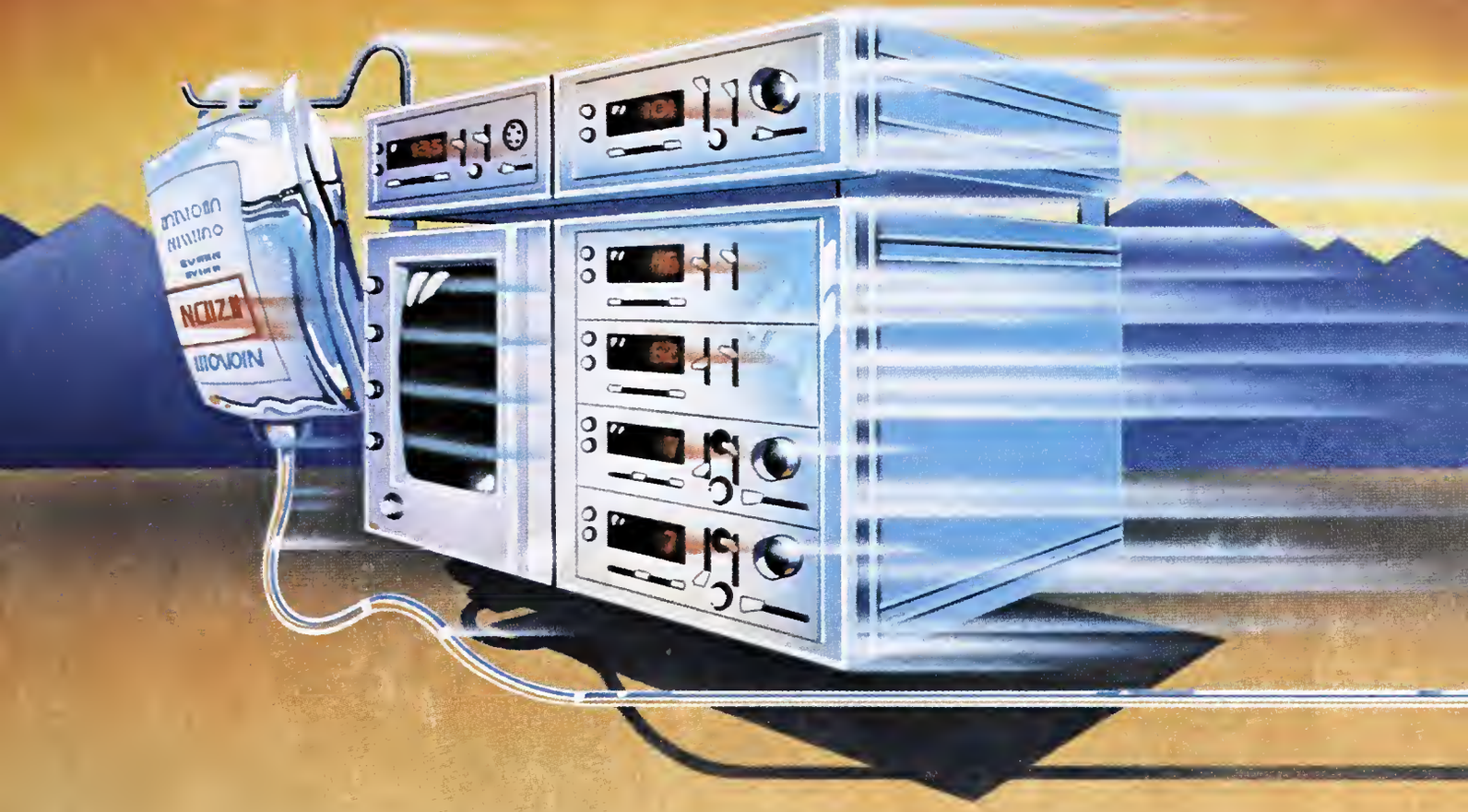
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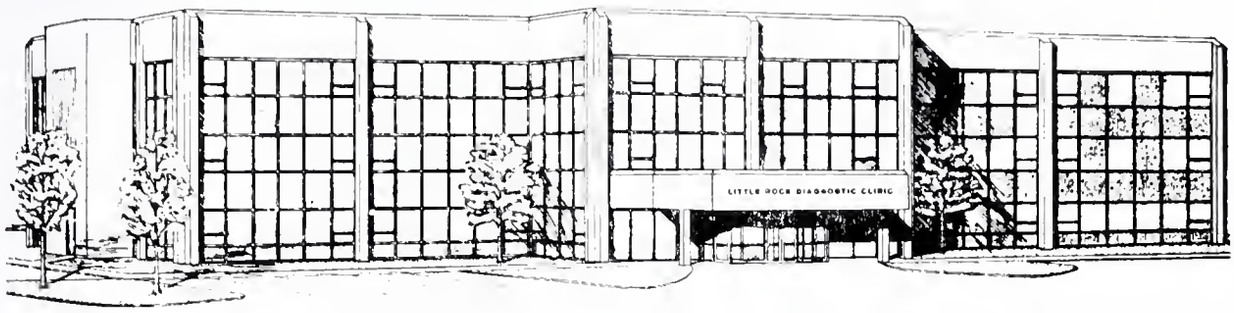
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ARKANSAS MEDICINE TODAY



TB kids on fast track

Children's tuberculosis is being successfully treated in Arkonsas with just one month of daily isoniazid and rifampin, followed by eight months of semiweekly treatments, reports Dr. Rosalind S. Abernathy of the University of Arkansas, Little Rock.[1] In addition to halving treatment time, the new TB therapy reduces drug costs by three-fourths. Most symptoms cleared in a few weeks, remarks Dr. Abernathy, and all cultures were negative in two months.[2] This is especially significant becouse in 1981, 1,681 of the 27,373 new known U.S. TB victims were under 14 years old. And it's in the tradition of Arkansas medicine, which pioneered the adult nine-month TB therapy.[1]

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References: **1.** *Medical World News,* Mar 14, 1983, p. 126.
2. Abernathy RS, *et al. Pediatrics 72*:801-86, Dec. 1983
3. McCusker K, McNabb E, Bone R *JAMA 248*:577-578, Aug 6, 1982.

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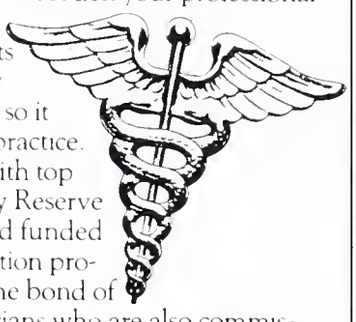
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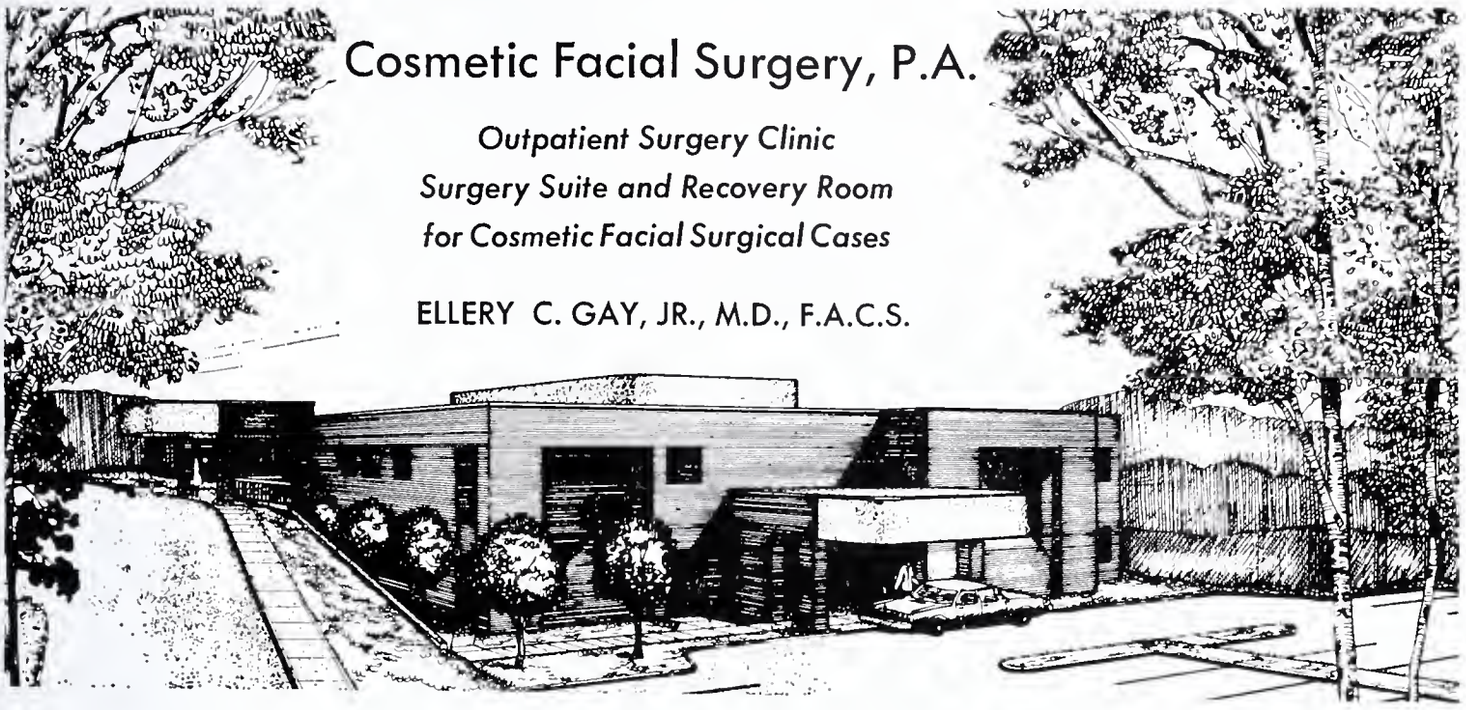
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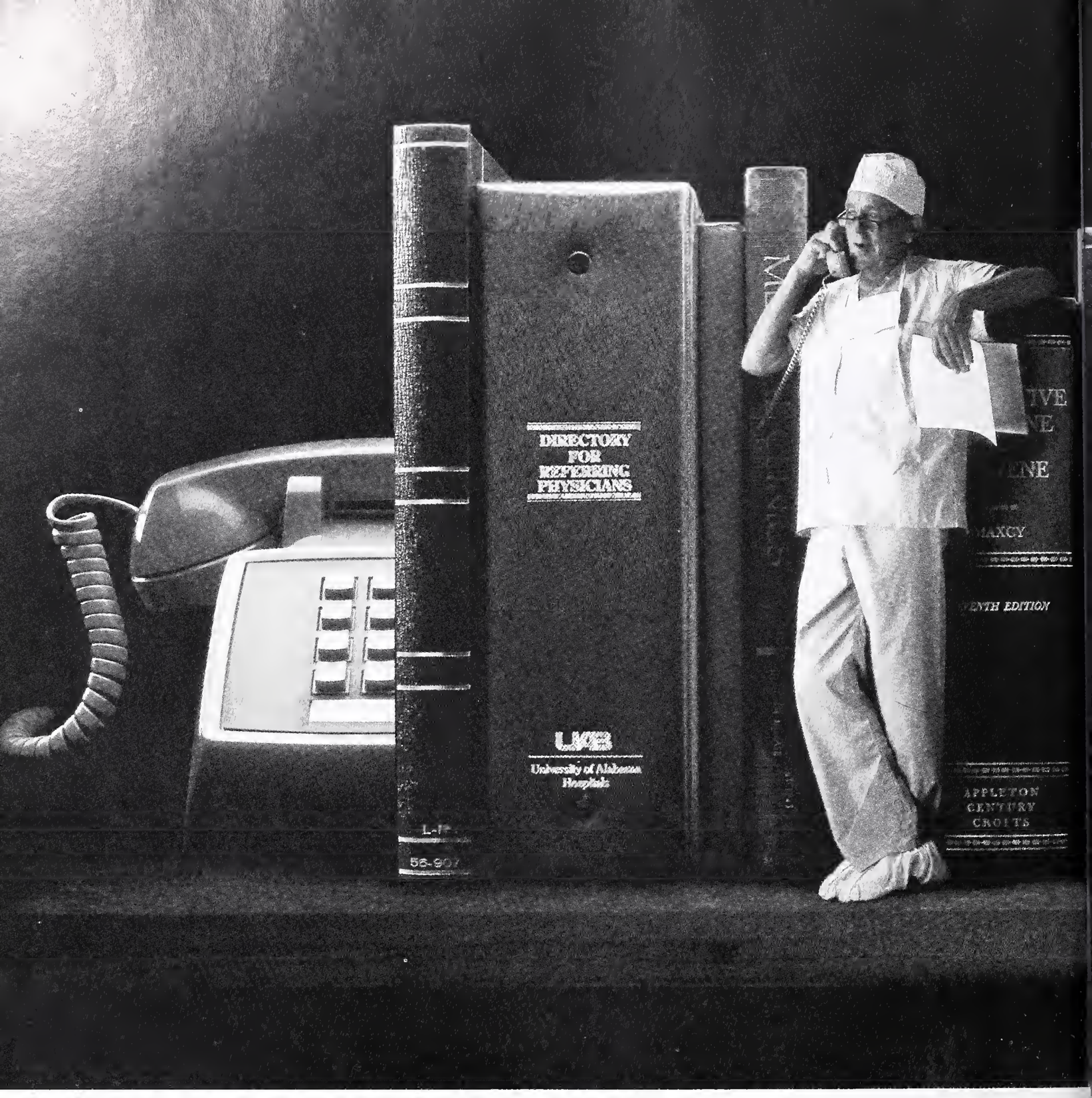
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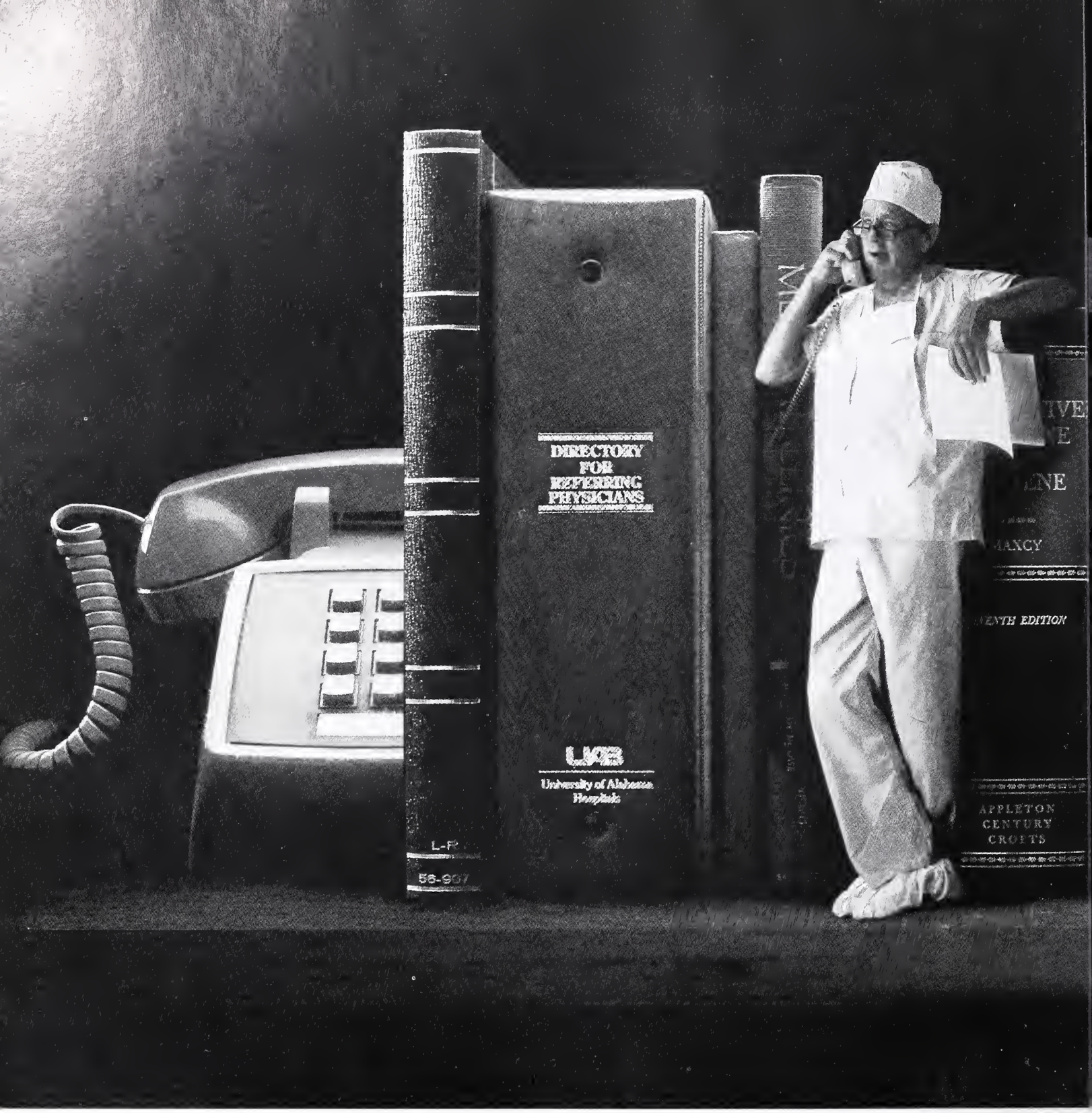
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Carotid Thromboendarterectomy: Accomplishments and Challenges

William H. Baker, M.D.*

Carotid endarterectomy is a commonly performed operation for the prevention of stroke and the alleviation of neurologic symptoms. In the November 13, 1954, issue of the *Lancet,* Drs. Eastcott, Pickering and Rob[1] first reported a reconstruction of the internal carotid artery. Their patient had a variety of attacks of right arm paresis and left eye blindness. When hospitalized in April, she had a carotid angiogram which revealed normal middle cerebral artery vessels with a large atheromatis lesion almost occluding the origin of the internal carotid artery. On May 19, 1954, the origin of the internal carotid artery was resected and an end-to-end reconstruction of the internal carotid system was carried out. She recovered without incident. The first carotid endarterectomy was performed by Dr. Michael DeBakey[2] on August 7, 1953, and that patient survived 19 years without recurrence of cerebral vascular insufficiency. Not known to either of the first two authors was the performance of an external carotid to internal carotid transposition for neurologic symptoms that was performed by Carrea, Molin and Murphy[3] in Buenos Aires on October 20, 1951.

Following these initial operations, carotid endarterectomy began to be applied to the patient with neurologic symptoms with increasing vigor. Soon not only patients with transient ischemic attacks were being referred to the vascular surgeon but patients with acute stroke were being offered surgical therapy. Needless to say, vascular training programs were not in existence and operations were being performed by general surgeons, cardiac surgeons, and neurosurgeons.

In order to determine the role of surgical therapy in patients with carotid atherosclerosis, the Joint Study of Extracranial Arterial Occlusions was organized in 1959.[4] At the beginning of the study, operative mortality rates were prohibitive. However, as experience was gained with the operation, proper indications for operation were emphasized, and as institutions with unsatisfactory operative experience were excluded, the operative mortality rate for the operation dropped to 1.5%.[5] The study demonstrated that with a low operative mortality and morbidity rate, patients with unilateral carotid stenosis and hemispheric symptoms seem to fair better with operation.[6] The study also verified that operating on patients with severe deficits and acute strokes was harmful.[7]

As a result of this, as well as numerous other publications, the dogma in 1985 is as follows: Hemispheric transient ischemic attacks are caused by emboli usually from the carotid bifurcation distally to the cerebral circulation. Although these emboli are sometimes controlled with anticoagulants or antiplatelet agents, carotid endarterectomy is an effective method of removing the source of the embolus, alleviating the patient of his transient neurologic symptoms, and preventing future stroke. Although the operation is performed in patients with non-hemispheric neurologic symptoms (dizziness, vertigo, diplopia, slurring of speech) this indication for operation is less well accepted. And finally in certain areas of the United States, carotid endarterectomy is being increasingly performed in asymptomatic patients as a stroke preventative measure. Although it is easy to understand the rationale of this operation, the efficacy of carotid endarterectomy in asymptomatic patients has yet to be proven. The remainder of this talk will cover some areas of concern which have been raised by knowledgeable physicians and surgeons as well as suggest areas into which the carotid endarterectomist might cautiously tread.

*Professor and Chief, Division of Peripheral Vascular Surgery, Department of Surgery, Loyola University Medical Center.
Reprint requests: William H. Baker, M.D., Professor and Chief, Division of Peripheral Vascular Surgery, Department of Surgery, Loyola University Medical Center, 2160 South First Avenue, Maywood, Illinois 60153.

Carotid endarterectomy is efficacious only when operative morbidity and mortality rates are low. Combined morbidity and mortality rates of 1-3% are not uncommon in respected centers of excellence. In my own experience[8] spanning over a decade and two institutions, we have reported 23 strokes in 940 operations for an overall stroke rate of 2.4%. All six deaths occurred in patients with neurologic deficits. None of the patients in the above reported series was operated using a temporary indwelling shunt. A review of that series suggests that patients with a low stump pressure and a contralateral carotid occlusion would have benefitted from the use of such a shunt. This is now our current practice.

Not all reports of carotid endarterectomy are as glowing. Eastman and Sherman[9] reported the combined experience of all carotid endarterectomies performed in Springfield, Illinois, in 1970. A variety of surgeons participated in the study with a combined stroke and death rate of 21%. These poor results were achieved equally with a variety of operative techniques. Previously, Prioleau[10] had reported that patients undergoing carotid endarterectomy with a temporary indwelling shunt actually faired worse than patients in whom a shunt was not used. The above statistics should not cast aspersions upon the use of a temporary indwelling shunt, but merely to underscore that such a device is not a substitute for technical excellence.

More recently in the November-December issue of *Stroke,* the guest editors[11] raised "an expression of concern" regarding carotid endarterectomy. In that issue are two articles concerning carotid endarterectomy, one from the greater Cincinnati area[12] and another from Allentown, Pennsylvania.[13] The stroke-death rates for these two areas are 9.5% and 4.4% respectively. In the analysis of carotid endarterectomy from Cincinnati, Dr. Bross showed that the morbidity-mortality rates were equal regardless of indication for operation (symptomatic v. asymptomatic) and again did not depend upon whether or not the patient had a temporary indwelling shunt during endarterectomy. His conclusions were that many of these postoperative strokes occurred after a lucid period suggesting that a delayed thromboembolic event was responsible for late neurologic deficits. He suggested that antiplatelet agents be used coincident with the operation. It is of interest however that his article identifies that some surgeons get good results whereas other surgeons get poor results. It is my contention that this is the important message to be gained from his experience. Antiplatelet agents, like temporary indwelling shunts, cannot be expected to salvage a technically inadequate operation.

Despite the above depressingly poor morbidity and mortality rates, there have been other series from smaller towns that report excellent stroke rates of 1-2%.[14,15,16] It is my impression as a vascular surgeon who is actively involved clinically at his own institution and still travels about the country a fair bit, that there is a wide variation in stroke and death rates between different surgeons. The surgical profession needs to emphasize its good results least the bad results emphasized by our medical colleagues taint the entire concept of carotid endarterectomy.

The joint study originally condemned carotid endarterectomy for patients with acute neurologic symptoms and neurologic deficits (acute stroke). It should be remembered that these dismal results obtained during this time of the joint study were obtained in patients who had severe deficits with altered states of consciousness. In 1976 Goldstone and Moore[17] reported a series of eleven patients with a tight internal carotid artery stenosis with stroke-in-evolution as well as crescendo transient ischemic attacks. All 11 of these patients did well, encouraging surgeons to cautiously care for patients with acute stroke syndromes. I raise this issue not because I believe all acutely stroked patients require carotid endarterectomy to insure complete neurologic recovery, but merely to suggest that there is a small subset of patients in whom endarterectomy may be indicated.

In our own experience we have seen 22 such patients. The indications for operation were continuing neurologic symptoms on maximal heparin therapy (11), pre-occlusive severe carotid stenosis (8), and intraluminal thrombus (3). None of the above patients had a totally occluded internal carotid artery. None of the above patients had a severe hemiparesis or loss of consciousness but had lesser degrees of neurologic deficits. Operation was successfully performed in 21 out of the 22 patients. Fifteen patients were improved, six patients remained the same, and one patient became worse and died. In the patient on heparin therapy, a sudden neurologic worsening was observed in early morning and he was taken to the operating room where an emer-

gency endarterectomy was performed. He awoke with a severe neurologic deficit which directly was responsible for his demise. At autopsy, he had a hemorrhagic infarct. Whether this hemorrhagic infarct was present pre-endarterectomy or was caused by the endarterectomy is conjectural.

Of interest is that 68% of our patients had positive CT scans preoperatively. It has been demonstrated that if the patient has a normal CT scan, then operation is probably safe. This study as well as others[18] demonstrated that operation can be performed safely in patients with moderate to mild deficits even if the CT scan is abnormal. Although vascular surgeons have been concerned for years that operation would directly lead to hemorrhagic infarct, it appears that this fear has been overstated.

Emphasis should be placed on the small number of patients in this series. We continue to believe that patients with acute neurologic deficits should be managed in the usual way. However, if symptoms continue on maximal medical management, if a greater than 90% stenosis, or intraluminal thrombus is identified angiographically, then operation can be safely performed.

Because of excellent operative rates in some centers, the operation has been extended to the asymptomatic patient with a severe carotid stenosis. It has been stated that the risk of stroke is perhaps 5% per year and that if endarterectomy can reduce this risk significantly, then the patient will be benefitted. The mechanism of stroke prevention is the avoidance of total carotid occlusion as well as the removal of a potential source of embolus. Furthermore, some surgeons employ the operation prior to planned major vascular reconstruction or cardiac operations. They reason that during these periods of potential hypotension and low flow, the patient is at risk of carotid thrombosis.

Although the above conjectures of pathophysiology appear plausible, in actual practice, they are unproven. Numerous investigators have demonstrated that prior endarterectomy is not required as an antecedent to an aortic reconstruction. The data is somewhat conflicting concerning carotid endarterectomy performed prior to cardiac surgery requiring cardiopulmonary bypass. Kartchner, et al.,[19] reported an increase of stroke to 17%, whereas Barnes [20] and Turnipseed[21] do not find such a risk. And finally, carotid endarterectomy has been proposed in all patients with Type C or severe ulcers within the atheroma.[22] It is my opinion that these asymptomatic patients rarely require operation unless the atheroma is in addition severely stenotic.

What then is the future of the operation as well as the future of the surgeons who perform carotid endarterectomy? What is being done to review the indications for operation? How can the utilization rates of the operation be assessed? And finally, how can the surgical results be improved if indeed local mortality and morbidity rates be excessive?

In order to review the indications of carotid endarterectomy in asymptomatic patients, a Veterans Administration study is currently in progress. Patients who are found to have a severe carotid stenosis on the basis of OPG-GEE have the stenosis verified by angiography before being randomly allocated into a surgical and non-surgical group. Patients with a lesser degree of stenosis are not followed. This study has been in progress for only a year and results have not yet been published. Operative morbidity and mortality rates should be available soon. It may be some time before the surgical and non-surgical groups can be accurately compared.

In addition, Dr. James Toole, a Neurologist from Wake Forest University, Bowman Gray School of Medicine, is organizing a multi-center study outside of the Veterans Administration system to evaluate surgery alone versus surgery plus aspirin in the treatment of asymptomatic patients. Patients will be identified by a variety of noninvasive means and the degree of stenosis will be verified angiographically. Those with a severe stenosis ($<$ than 50% in diameter or 2.5mm lumen size) will be randomly allocated into a surgical or non-surgical group. All patients will be given antiplatelet agents. This study is in the planning stages and has yet to be funded.

The utilization rates of carotid endarterectomy varies from southern California to the heartland of the Midwest. Is carotid endarterectomy being recommended too often for questionable indications or is operation being denied to truly stroke prone patients? The Rand Corporation of Los Angeles, California, is conducting a privately funded study to determine whether carotid endarterectomy is under or over utilized. A variety of "experts" were gathered in Los Angeles and a set of indications of operation established. Currently workers are out in the field gathering

information from hospital and physician's records. This information is to be collated and the results will need to be discussed and interpreted. Hopefully meaningful conclusions can be drawn from this study at its completion.

If indeed carotid endarterectomy is poorly performed in a hospital or by an individual practicing surgeon, what can be done to correct the situation? Although hospital board censorship, limitation of surgical privileges, and litigation have been employed, open and frank professional review is in my opinion a better alternative to improve quality control. A prominent neurologist and I were asked to participate in one such review. "St. Elsewhere" recognized that the results from carotid endarterectomy were unsatisfactory. During a weekend, the two specialists discussed the indications for operation and the anticipated results. In addition, the past results of the audit were discussed as well as each case in whom an unsatisfactory outcome was obtained. It is my understanding that a year after the original audit, a repeat audit shows a gratifying improvement in patient care.

Local medical organizations can no longer ignore that such problems exist and fail to act accordingly. To do so invites the cumbersome and heavy-handed bureaucracy of government into our review and policing process. Like it or not, 1984 has passed and big brother is already on the scene. With the advent of DRGs (diagnosis related groups) each hospital's track record of carotid endarterectomy is easily retrievable. Most hospital administrators anxious to completely milk the federal dollar will be eager to tack on additional diagnoses such as postoperative stroke, so that perhaps hospital discharge information will be more accurate in the future than it has been in the past. These hospitals who demonstrate a prolonged hospital stay and increased stroke rate will be clearly earmarked. Furthermore, as time goes by, DRGs will be available and applicable for each and every surgeon. The vast majority of excellent surgeons who obtain superb results should have nothing to fear from such data.

I hope this paper has generated a sense of pride in the accomplishments of carotid endarterectomy in the past, while at the same time raising concerns about the future of the operation. It is my opinion that it is an extremely valuable operation when well done for the proper indications. In the future, indications for the operation may actually broaden to encompass groups of patients not currently being approached. The challenging future of this operation rests in the capable hands of excellent general vascular surgeons.

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Hepatic Infusional Chemotherapy in Metastatic Colorectal Carcinoma and Hepatoma

R. J. Blachly, M.D., I. S. Reid, M.D., L. F. Hutchins, M.D., N. P. Lang, M.D., B. A. Neilan, M.D., and S. G. Ortego, R.N.P.*

ABSTRACT

Floxuridine (FUDR) was infused into the hepatic artery, via a totally implantable infusion pump, in eighteen patients with colorectal carcinoma metastatic to the liver, and four patients with hepatocellular carcinoma. Doses of FUDR ranged from 0.1-0.4 mg/kg/24 hrs., for the first 14 of every 28 days. Patients suitable for evaluation had to receive 3 courses of FUDR and survive 90 days. Ten of 12 (83%) patients suitable for evaluation with colorectal carcinoma responded with a median duration of response of 7 months. Estimated median survival for responders is 20 months. Two patients of toxicity were noted. In each, nausea, right upper quadrant pain and sometimes diarrhea occurred. The two types of toxicity differed mainly in the degree of cholestasis and the time delay in therapy. It is unknown whether the high response rate for patients with hepatic metastases from colorectal carcinoma will be accompanied by significantly improved survival.

INTRODUCTION

Patients with untreated hepatic metastases from colorectal carcinoma have a mean survival of from 4 to 6 months and a median survival of less than 3 months.[1,2,3] Because of the poor prognosis, numerous clinical treatments including surgery,[4] hepatic artery ligation,[5] and systemic chemotherapy[6] have been tried for this condition. Interest in intra-arterial floxuridine (FUDR) chemotherapy has increased recently with the availability of totally implantable infusion pumps. Using such devices, a high response rate was noted for hepatic tumors.[7,8] This route of administration is advantageous for several reasons. First, because it is given intra-arterially, hepatic drug levels are achieved which are much higher than those possible with intravenous infusion. This is especially important because while normal hepatocytes receive most of their blood supply from the portal vein, liver tumors have the hepatic artery as the predominant blood supply.[9] Second, the high extraction of 5-FU and FUDR by the liver[10] results in little or no systemic effects of chemotherapy.

Various methods of administering chemotherapy directly into the liver have been studied in the past. Percutaneously- and surgically-placed catheters have been used but have the disadvantages of possible dislodgement, the inconvenience of an external catheter, and the increased risk of infection. The totally implantable subcutaneous pumps now available have largely overcome these disadvantages.[11] In this paper we report our experience with intrahepatic FUDR infused via these subcutaneously implanted pumps.

MATERIALS AND METHODS

Patients

From July 1982 to May 1984, twenty-two patients had Infusaid infusion pumps (Infusaid Corporation, Norwood, MA) subcutaneously placed with catheters into the hepatic artery (Table I). Four patients had hepatocellular carcinoma while eighteen had colorectal carcinoma metastatic to the liver. Eighteen patients were males and four were females. The age range was 44-76 years with a median of 59 years. Eight patients had received previous pelvic radiotherapy and/or 5-fluorouracil (5-FU). Five patients later in the study received systemic infusion of 5-FU alternating with intrahepatic FUDR.

Methods

Floxuridine was administered via the Infusaid pump at doses ranging from 0.1-0.4 mg/kg/24 hrs. for the first 14 of every 28 days. In order to be suitable for evaluation for response, a patient must have survived at least 90 days with the pump in place and have received at least three courses of intra-arterial chemotherapy. Criteria for partial response were decreasing or stable metastases by radionuclide or computed tomography scan of the liver plus decreasing or stable carcinoembryonic antigen level (CEA) or in patients with hepatocellular carcinoma decrease in alpha fetoprotein (AFP). No new site of disease was allowed for patients to be counted as partial responders. A complete response was defined as complete resolu-

*Departments of Medicine and Surgery, University of Arkansas for Medical Sciences and VA Medical Center, Little Rock, Arkansas.

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Requests for reprints should be addressed to Ronald J. Blachly, M.D., Hematology/Oncology, Slot 508, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.

tion of all measurable or detectable tumor and normalization of CEA or AFP if previously elevated. Criteria for progression included increasing CEA or AFP, liver metastases, or appearance of new disease.

RESULTS

Colorectal Carcinoma Patients

Twelve of eighteen patients in this group are suitable for evaluation. Of the 6 not suitable for evaluation, 3 had early postoperative deaths, two were lost to follow-up, and one patient had all known disease resected. Two of the 3 patients who expired had extensive disease in the liver and poor performance status.

Ten of the twelve patients suitable for evaluation (83%) had a partial response. Of these responders, five patients continue therapy in partial remission, three are alive with relapsed disease, and two have died with progressive disease at 17 and 21 months. The duration of response ranged from 6 to 17+ months. The median duration of response was 7 months.

Hepatoma Patients

Only one of the four patients with hepatoma is suitable for evaluation for response. The three patients not suitable for evaluation all had early deaths. One patient had an infected pump removed at 60 days postoperatively and died of sepsis at 3 months; the other two expired secondary to progressive disease at 30 and 90 days following surgery. These 3 patients all had cirrhosis and high AFP levels. The one patient suitable for evaluation has survived 20 months, having received only radiotherapy for a spinal metastasis; he continues to receive FUDR. The liver metastases in this patient are stable. In contrast to the other three patients with hepatoma, this patient had a low pretreatment AFP level (6.2 ng/ml) and normal liver function tests.

Early Mortality

Six of the 22 patients (27%) survived less than 90 days from the date of pump implantation. Three of these deaths were associated with surgical complications: one patient had a pump pocket infection and received no treatments due to removal of the pump; one patient had an enterocutaneous fistula; one patient had postoperative bleeding and wound dehiscence. The other three deaths were due to rapidly progressive disease.

Toxicity

Twelve episodes of toxicity were seen in 10 patients and appeared related to the dose of floxuridine. Two patterns of toxicity emerged. Eight episodes of mild toxicity occurred in 7 of 16 treated patients (43%) and were characterized by nausea, right upper quadrant pain, and mild to moderately elevated alkaline phosphatase. Normal bilirubin levels and serum glutamic oxaloacetate transaminase (SGOT) levels less than 100 IU/l were noted. Diarrhea and peptic ulceration or gastritis were documented in some patients. They consistently improved after administration of antacids and cimetidine and postponement of treatment. Therapy had to be postponed in 4 of these 7 patients an average of 9 weeks (range 6-19 weeks).

Three of 16 treated patients (19%) experienced the same type of symptoms mentioned above, but of greater severity. In these patients (Type II toxicity) the bilirubin was elevated and the SGOT increased to greater than 150 IU/l. Longer periods off therapy were necessary because of Type II toxicity—12 weeks average, range 10-14 weeks. Therapy was resumed at lower dosages in all 3 patients, but was not always tolerated. In addition, chemical cholangitis, cholecystitis, or biliary sclerosis were noted in these 3 patients. One patient had a stricture of the common bile duct as well as narrowing of the intrahepatic bile ducts. He subsequently developed jaundice and marked elevation of liver function tests following administration of cis-platinum.

DISCUSSION

In this study intrahepatic FUDR resulted in a high response rate for hepatic metastases from colorectal carcinoma. These results are consistent with other series.[12] However, not all investigators have reported success with this technique.[13] Although the response rates are superior to those with systemic 5-FU alone,[11] whether this will be reflected in improved survival remains unproven.

The fact that virtually all of the chemotherapy was administered in the outpatient setting represents an advantage. At most, patients were required to visit the clinic every two weeks to have the Infusaid pump filled with either FUDR or saline. This visit provided the opportunity not only to administer needed medical services, but also to provide emotional and psychological support. In addition, several of our patients' family physicians have become skilled at administering

the chemotherapy, which confers the additional advantage of continuity of care.

When compared to hepatoma patients, patients with liver metastases from colorectal carcinoma appear to fare better. This may be due to the fact that hepatoma frequently occurs in cirrhotic livers with little or no normal liver tissue. Also, response rates of hepatoma appear to be less than those of colorectal carcinoma metastatic to the liver.[3] The only responding hepatoma patient had a good performance status, low AFP (6.2 ng/ml) and normal liver enzymes, while the other three hepatoma patients all had poor performance status and very high AFP levels and/or liver function tests. Two of three colorectal carcinoma patients with early deaths had CEA's of 1300 and 2300 ng/ml. For these reasons we do not recommend intra-arterial therapy for patients who have extensive hepatic disease, markedly elevated liver enzymes, or poor performance status. These recommendations are similar to those of Stagg, who has extensively reviewed the subject.[12]

The toxicities seen in this study have been reported by others.[11] Each of the responding patients experienced some toxicity, but it was mild in most cases. With careful surgical technique to avoid inadvertent perfusion of the gallbladder and gastroduodenal mucosa with chemotherapy, fewer patients are experiencing toxicity. The one patient with the most serious toxicity (gangrenous gallbladder) was treated early in the series, and did not have a cholecystectomy at the time of placement of the pump, as is now standard procedure. Patients with Type I toxicity, thought to be due to exposure of the gastric mucosa to high concentrations of FUDR or its metabolites, usually improved following administration of antacids and cimetidine, and short periods off treatment. Type II toxicity seemed to be related to a toxic effect on cholangiocytes and/or hepatocytes and caused more morbidity. Fortunately, this form of toxicity was uncommon.

During the study it became apparent that those patients responding in the liver relapsed frequently with systemic disease. This is due to the fact that FUDR is completely cleared by the liver on its first pass, and therefore exerts no systemic antitumor effect. For this reason we have now begun to administer 5-FU in a "sandwich" fashion between courses of FUDR. Although it is too

TABLE I

RESPONSE TO INTRA-ARTERIAL FLOXURIDINE

Patient	Age	Sex	DX	CEA (AFP) ng/ml	BILI ng/ml	Response
1	57	M	C	—	—	NE (Moved)
2	57	M	H	—	0.7	NE (Died)
3	51	M	C	2.1	0.8	12 mos.
4	63	M	C	.6	0.7	12 mos.
5	51	M	C	560.0	1.2	NE (Moved)
6	44	F	C	38.0	0.4	6 mos.
7	54	M	C	16.0	0.4	17 mos.
8	64	M	H	(6.2)	0.5	18 mos.
9	63	M	H	(548)	1.8	NE (No Rx)
10	59	F	H	(316)	1.5	NE (Died)
11	63	F	C	1320.0	1.6	NE (Died)
12	62	M	C	14.0	0.6	6+ mos.
13	58	M	C	5.0	0.6	2+ mos.
14	55	M	C	32.0	0.4	9 mos.
15	67	M	C	—	0.3	7 mos.
16	66	M	C	183.0	0.6	4 mos.
17	76	M	C	102.0	1.0	6 mos.
18	59	M	C	5.8	0.3	NE (Died)
19	50	M	C	53.0	0.4	NE (Too early)
20	59	M	C	18.6	0.7	NR
21	75	M	C	2290.0	0.5	NE (Died)
22	58	F	C	216.0	0.6	NR

C = colorectal carcinoma, H = hepatoma, NE = not evaluable, NR = no response

early to draw conclusions, there has not been any increase in toxicity with the combination. Administration of 5-FU by continuous 96-hour infusion is accomplished with the use of ambulatory infusion pumps and subcutaneously central venous catheters attached to a small reservoir which can be percutaneously pierced, allowing ambulatory treatment for systemic therapy as well.

Although the initial cost of the pump is substantial — about $3,500 — the elimination of repeated hospitalizations for chemotherapy allows much of this to be recouped early, since all subsequent treatments are given in the outpatient setting. Third-party providers have generally covered the cost of pump placement and treatments, realizing the savings from avoiding repeat hospitalizations. More importantly, the majority of patients given chemotherapy in this fashion feel more independent, which aids them in adjusting psychologically.

In summary, this method of treatment of metastatic colorectal carcinoma has been shown to be effective, associated with tolerable toxicity, and feasible as an outpatient form of therapy. We are currently studying the use of lower doses of FUDR to determine whether comparable response rates can be maintained while decreasing the incidence of toxicity.

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Pancreatobiliary Decompression for Pancreatitis Special Reference to Pancreas Divisum

Robert L. Bomar, M.D.*

The complications of pancreatitis including intractable pain, pseudocyst, and abscess formation may necessitate surgical management. The presented study analyzes all cases of complicated pancreatitis treated surgically at the Nashville VAMC from 1966 to 1975 and subsequently followed for a period of 10-15 years. Special reference is made to 2 cases of pancreas divisum treated surgically.

During a 10 year period (1966-76), 71 cases of pancreatitis were treated surgically. Operative procedures included external drainage (for pancreatic abscesses); internal drainage (for pseudocyst), sphincter division (for chronic pancreatitis—many associated with gall bladder disease), and pancreatic duct decompression (for chronic pancreatitis). Results of the above modes of surgical management are assessed with long term (10-15 years) follow-up available in most instances.

External drainage of pancreatic abscess was carried out in 16 patients (Table 1). Mortality, necessity for reoperation, and death were appreciable in this group. Internal drainage of pancreatic pseudocyst was carried out in 17 patients (Table 2). Approximately one half of these patients remained well while re-operation and a subsequent finding of pancreatic carcinoma were experienced by several of these patients (Table 3). Pancreatic duct drainage with enteric anastomosis was carried out in 17 patients (Table 4). Longitudinal pancreatic ductal decompression (Puestow) was more frequently employed than distal ductal decompression (Duval). Immediate and late results were satisfactory in most of these patients, however a few required re-operation or experienced chronic pancreatitis post-operatively (Table 5). Sphincter division was employed in 21 patients with recalcitrant recurrent pancreatitis—often associated with gallbladder disease (Table 6). Cholecystectomy was usually carried out along with sphincter division. 40% of these patients obtained good pain relief post-operatively while the majority experienced continued chronic pancreatitis or required later re-operation (Table 7).

DISCUSSION

Reported experience with the surgical management of pancreatitis is variable with pain relief reported between 50-90%.[11,15,16] Extended periods of observation have revealed a decreased incidence of pain relief.[1] This current study with long term follow-up confirms a reasonable degree of pain relief (40%-75%) with the surgical management of chronic pancreatitis. However, when pancreatic abscess is encountered the necessity for re-operation and the mortality rate remain high (45-90%); this trend has been maintained in other reports.[4] Relief of pain with internal drainage of pancreatic pseudocysts is effective in most instances (55%),[11,17] particularly in those alcoholics who maintain abstinence. A small but significant number of carcinomas of the pancreas are found remotely after decompressive procedures;[8] 2 such patients were found in the present study.

Pancreas divisum represents an interesting anatomic variant, thought to be present in 5%-10% of the population and possibly somewhat more common in patients with pancreatitis.[3,5,14] ERCP may lead to recognition of the active and functional accessory duct of Santorini. Operative management of pancreatitis associated with pancreas divisum is variable in its effectiveness.[3,7,10] Two cases of pancreas divisum are presented:

H. J., an adult black male, diabetic and alcoholic, presented a 4 year history of abdominal pain in 1975. He was found to have gallstones and elevated serum bilirubin. Cholecystectomy was carried out. The pancreas was "edematous" and operative cholangiogram was normal. Three months post-operatively abdominal pain and hyperamylasemia recurred. Ultrasonography revealed an enlarged pancreatic head. At reoperation, common duct exploration was normal; however, an accessory duct of Santorini was found and opening of this orifice was carried out. After immediate pain relief, he resumed his alcoholic intake and subsequently died in 1981 (6 years). Postmortem exam revealed a pancreatic abscess containing a benign cystadenoma.

D. R., an adult white male alcoholic presented with abdominal pain of short duration and hyperamylasemia in 1978. A Nardi test was positive. Cholecystectomy, common duct exploration, Oddi sphincteroplasty, and dilatation of the duct of Wirsung were carried out. Abdominal pain re-

*Veteran's Administration Medical Center, 1310 24th Avenue South, Nashville, Tennessee 37203.

TABLE 1
PANCREATITIS 1966-1985
PANCREATIC ABSCESS 16 PTS.

External Drainage Outcome	
Re-operation	14 (90%)
Died	7 (45%)
Continued Pancreatitis	5 (30%)
Satisfactory	4 (25%)

TABLE 2
PANCREATITIS 1966-1985
PANCREATIC PSEUDOCYST 17 PTS.

Internal Drainage	
Cystogastrostomy	9
Cystoduodenostomy	4
Cystoenterostomy	3
Pancreatectomy	2

TABLE 3
PANCREATIC PSEUDOCYST
INTERNAL DRAINAGE 17 PTS.

Outcome	
Well	9 (55%)
Continued Alcoholic Pancreatitis	5 (32%)
Re-operation	3 (15%)
Pancreatic Carcinoma	2 (12%)
Death	2 (12%)

TABLE 4
PANCREATITIS 1966-1985
CHRONIC PANCREATITIS 17 PTS.

Pancreatic Duct Drainage	
Puestow	11 (65%)
Duval	6 (35%)

TABLE 5
PANCREATITIS 1966-1985

Pancreatic Duct Drainage Outcome	
Satisfactory	13 (75%)
Died	3 (15%)
Chronic Pancreatitis	2 (10%)
Re-operation	2 (10%)

TABLE 6
PANCREATITIS 1966-1985
CHRONIC PANCREATITIS 21 PTS.

Sphincter Division (Associated GB Disease—80%)	
Sphincterotomy	11 (55%)
Sphincteroplasty	10 (45%)

TABLE 7
PANCREATITIS 1966-1985

Sphincter Division Outcome	
Well	10 (40%)
Re-operation	7 (30%)
Chronic Pancreatitis	7 (30%)

curred promptly and a Nardi test was again positive. ERCP revealed two probable duct openings in the duodenal lumen. Six months following his initial operation a Santorini ductotomy was carried out. Over the ensuing 5 years, he experienced abdominal pain requiring analgesics. Nardi tests remained negative. Celiac plexus anesthetic blocks were temporarily effective. His alcoholism remained reasonably well controlled with Antabuse.

Experience with pancreas divisum at this institution, while limited in number, indicates limitation in the capability of achieving effective and long term relief of pain; this limitation appears compounded by the patients' election to continue the use of alcohol.

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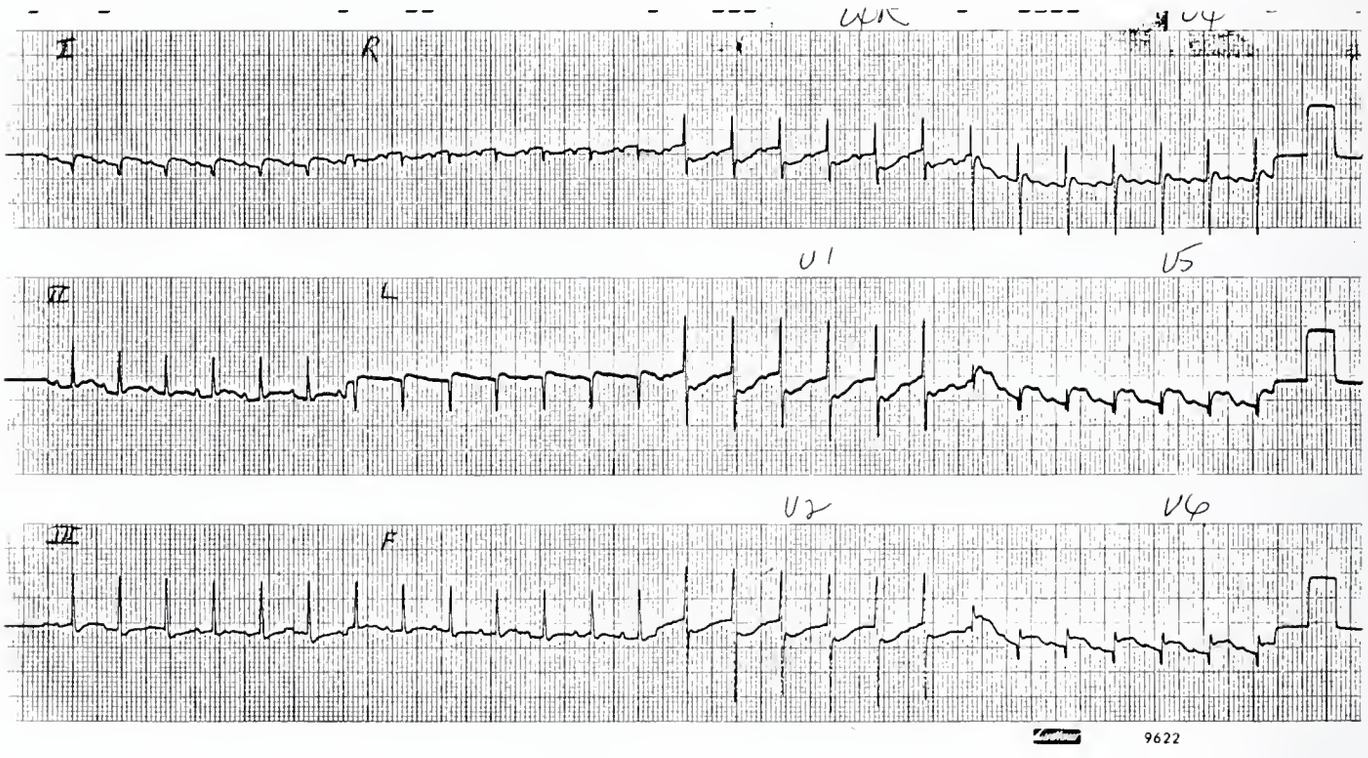
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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 319)

HISTORY: This ECG appeared late one day without the potential benefits of clinical information. As it stands, what do you think of the trace?



William C. Roberts, M.D.
John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Scope of Health Education

Beth Broyles*

As enthusiasm for health education gains momentum worldwide, one can certainly expect more attention to questions such as "What is health education?", "When is health education carried out?", "What are the methods of health education?", "Who carries out health education?" and "How does one evaluate health education?" This paper is an attempt to answer these questions and to help clarify your own definition and perception of health education.

WHAT IS HEALTH EDUCATION?

There are almost as many definitions of health education as there are health educators. But according to Green and Krueter, health education is the term applied to the planned use of educational processes to attain health goals. It includes any combination of learning experiences designed to facilitate voluntary adaptations of behavior conducive to health. This definition emphasizes the scope as well as the purpose of health education. It enables us to delineate more explicitly which programs, activities, and methods may be characterized as educational. There are several key terms to be considered in this definition: A *combination* of interventions should be used, composed of different messages to and different supports for different people; the learning process must involve *several* components and change must be *voluntary*. Health education is more than the provision of information. While health education includes acquiring knowledge about health matters, its purpose is the use of that knowledge. It addresses the formation of values, the acquisition of decision-making skills and the adoption or reinforcement of desirable health practices. Health education honors the individual's right to privacy, their right to meaningful information, and their right to make their own choices. Health education is one very promising approach to health improvement, but it has only limited power to counteract the health impact of such factors as economic depression, poor housing, and persuasive media.

WHEN IS HEALTH EDUCATION CARRIED OUT?

There are health education needs throughout the life span and through all stages of health and illness. School-aged children and pre-school children and their parents present especially important targets and opportunities for education about health. Since all parents provide role models and establish basic health practices, and because attitudes and beliefs about health are developed early in the home, parents also need to be assisted in their role as health "teachers". College students, families, men and women in the middle years, and senior citizens in turn have special health education needs. Health education is an essential ingredient in programs for promotion of wellness, prevention of illness and disability, and for the control of disease. Because the need for health education is interwoven through the life span, it should be provided in a variety of settings: in the medical system and the physician's office, in the home, in the school, in programs for senior citizens, in the work setting and through mass media. Health education activities have a common basis no matter where they occur.

WHAT ARE THE METHODS OF HEALTH EDUCATION?

When studying strategies for behavioral change, two main principles should be remembered: There is no single educational or behavioral method which, by itself, can be expected to achieve lasting change in health behaviors and

*Director, Division of Health Education and Promotion, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72205-3867.

secondly, there is no single educational or behavioral method that is inherently superior or inferior to the others. Each method has its place and a special potential in health education, but also its limitations. Methods are selected following an analytical process which includes consideration of the needs and characteristics of the target group, the goal to be achieved, and the nature of the learning issue to be addressed. The more complex the causes of the behavioral problem, the greater the range of strategies that will be required. For example, a program to advise people in a rural community of the time and place of an immunization clinic need consist only of placing a few notices in the local post office, general store, and church. A program to control venereal disease, drug abuse, or teenage pregnancies will require, on the other hand, massive information dispensing efforts and community organizing strategies in schools, clinics, work sites, and other community locations, and these activities must be coordinated with those growing out of other health, educational, and economic development programs. Some of the methods available include individual instruction, community organization, audiovisual aids, use of mass media, role playing, lecture, peer-group discussion, programmed learning, and behavior modification. In planning an effective program, the best possible combination of educational approaches must be selected. A minimum of three educational strategies should be used. In most health education programs, audiovisual aids or other media techniques should be one of the three strategies. They are effective in reinforcing and strengthening other educational strategies. The longer the health educational program, both in terms of hours and number of sessions, the greater the number of educational strategies that should be used. For a school health program, a common combination would be a lecture, discussion and audiovisual aids.

WHO CARRIES OUT HEALTH EDUCATION?

Health education is carried out in many settings by a variety of people under diverse organizational auspices, i.e., state and local health departments, voluntary health agencies, community health centers, school systems, health care institutions, and others. Preparation for fulfilling this function should be a part of both pre-service and in-service training for all health care practitioners and health education purposes. In many cases they are prepared for particular assignments. In addition to these health workers, there is a group of people who are specially prepared, by education and experience, to identify the education and demands that must be met to attain health goals and who are equipped to plan, carry out and evaluate health education programs. Health educators assist other workers in health care, education, and community organizations to provide education directed towards health goals. They establish programs and curricula suitable for various settings, assist communities to make changes in the environment in order to promote health, and stimulate and conduct research and evaluation in relation to education for health. Some health educators are prepared for work in a particular setting such as the school or hospital, while others may have more comprehensive preparation. Professional preparation programs are offered at the bachelors, masters and doctoral academic levels.

HOW DOES ONE EVALUATE HEALTH EDUCATION?

There are three levels at which a health education program can be evaluated. It can be evaluated in terms of process, in terms of impact, and in terms of outcome.

In a process evaluation, the object of interest is professional practice, and the standards of acceptability is appropriate practice. Quality is monitored by various means, including audit, peer review, accreditation, certification, and government or administrative surveillance of contracts and grants. Standards of acceptability are established both professionally and administratively and are derived chiefly by means of concensus among health education specialists. The second level is impact evaluation. Evaluation here focuses on the immediate impact the program, or some aspect of it, has on knowledge, attitudes and behavior. Have the short-term goals been met? In terms of behavior, the planner will ask such questions as: Does it take as long for members of the target population to seek medical care as it did before the program? Is there an increase in health enhancing behavior? Are diseases being diagnosed earlier? Has exposure to risk been reduced? Cost effectiveness is the most succinct standard of acceptability in impact evaluation. At the third level of outcome evaluation, the

objects of interest are mortality and morbidity. Have the incidence and prevalence of the condition(s) been affected by the program? Have the rate and length of survival following detection and treatment changed? Again, cost-effectiveness is one standard of acceptability; this standard can be expressed more humanely in terms of number of lives saved or improved. Outcome evaluation is a long term undertaking requiring large population samples.

In brief, the number of educational pamphlets that are distributed is a process measurement. The number of patients who make appointments or continue to attend smoking cessation classes is an evaluation statement. Years later, outcome might be measured in terms of increased survival and reduced morbidity and mortality.

Optimum health for the nation's population is the goal of public health. Today, more than ever before, examination of the causes of ill health and of the means available for improving health status is focusing on health education as a way to achieve public health goals. Although a standard definition of health education continues to elude us, its absence does not seem to detract from our individual and collective efforts to strengthen and improve health education practice and related research.

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Pediatric Update:

Incidence and Etiology of Hypertension in an Arkansas Pediatric Population

J. B. Norton, Jr., M.D., Watson C. Arnold, M.D., and Neil Sims, M.D.*

INTRODUCTION

Systemic hypertension remains a major health problem in the United States. The treatment of moderate and severe elevations of the diastolic blood pressure (greater than 105 mm.Hg.) has resulted in a decrease in the mortality and morbidity of this condition.[1,2] However, the treatment of mild diastolic hypertension (90-105 mm.Hg.) remains more controversial, partially because the beneficial effects of therapy in this group of patients may be delayed for many years.[3] In children the incidence of hypertension from correctable or organic causes is greater than in adults. But essential hypertension also appears to begin in childhood and the incidence of essential or non-organic hypertension increases greatly after puberty.[4-9] Surveys of the incidence and etiology of hypertension in children have been conducted primarily in either urban or rural areas with predominant white populations, but rarely in a mixed urban/rural area such as Arkansas.[8,9] We have surveyed the incidence of hypertension in a general outpatient pediatric population and determined the most likely etiology of significant hypertension in a sub-group of these young patients.

METHODS

Incidence of Hypertension

Using cuff techniques described below, the systemic blood pressure was obtained in a group of 441 children ages 1-17 years seen consecutively in a general outpatient clinic at the Arkansas Children's Hospital. The pressure was measured by two physicians using a cuff that was two-thirds the length of the upper arm. The fourth Karatkoff sound served as the marker for the diastolic pressure. Systolic blood pressure in children less than 3 years of age was obtained by Doppler techniques with an appropriate size cuff. The diastolic pressure is not obtained using a Doppler method. Mean and standard deviations for each age group were calculated and compared to standard age dependent curves developed by the National Center for Health Statistics (NCHS).

Etiology of Hypertension

Fifty-three consecutive patients evaluated in the hypertension clinic at Arkansas Children's Hospital were catalogued to determine the etiology of their hypertension. Forty-seven of these children were divided by age into three groups and the etiology of their hypertension determined through standard diagnostic tests including physical examination, serum electrolytes and creatinine, urinalysis, electrocardiogram, arteriography or other tests.

RESULTS

Table I identifies the mean, standard deviation and range of systolic and diastolic blood pressure in 441 children seen in an outpatient setting. It is not intended as a detailed analysis of blood pressure in the pediatric population. No effort was made to identify the presenting complaints or to segregate the children by weight and height, body build, or obesity indices. Previous studies in children have elaborated these details.[8,10,11]

Table II demonstrates the diagnostic etiology of hypertension in a subset of 47 hypertensive children. Nineteen percent (9/47) of these hypertensive children were infants 0-2 years of age. The most common cause of hypertension in this age group was coarctation of the aorta. The prejuvenile patients, 2-12 years of age, represented 21% (10/47) of the hypertensive children. Essentially all of these children were pre-pubertal. Approximately one-third of this group had renal parenchymal disease as the etiology of their hypertension. However, half of this age group had hypertension of uncertain etiology, that is either essential hypertension, labile hypertension, or hypertension associated with obesity. The age

*Department of Pediatrics, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205 and Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Arkansas 72202.

group 12-21 years represented 60% of the patient total. Of that group half had essential hypertension and an additional 7 had either labile hypertension or hypertension associated with obesity. Of the total 47 children of all ages 34% carry the diagnosis of essential hypertension and an additional 18% have either labile hypertension or hypertension associated with obesity. Thus over half of the hypertensive children in this study could be categorized as having elevated pressure of uncertain etiology.

TABLE I
MEAN BLOOD PRESSURE IN PEDIATRIC OUTPATIENTS

Age	N=	Mean BP *Systolic* / diastolic	±SD	Max.	Min.
≤ 3 yrs.	74	**100* /	*20* /	*150* /	*45* /
> 3 to ≤ 5 yrs.	44	*100* / 55	*14* 18	*135* 85	*70* /
> 5 to ≤ 7 yrs.	49	*102* / 64	*10* 12	*120* 94	*75* 34
> 7 to ≤ 9 yrs.	68	*103* / 63	*14* 13	*146* 112	*78* 36
> 9 to ≤ 11 yrs.	43	*112* / 68	*14* 16	*150* 96	*90* /
> 11 to ≤ 13 yrs.	54	*115* / 73	*14* 11	*150* 102	*80* 50
> 13 to ≤ 15 yrs.	72	*115* / 74	*14* 11	*166* 109	*90* 40
> 15 to ≤ 17 yrs.	37	*122* / 79	*16* 13	*170* 110	*100* 60
	—— 441				

*Systolic pressure by Doppler technique

DISCUSSION

Like athlerosclerosis, the adverse effects of hypertension in children may not be noted until much later in adult life.[1,2] Also, the measurement of blood pressure in children may be difficult due to methodologic problems, including appropriate cuff sizes, obtaining blood pressures in relaxed patients who are not anxious or afraid, recognition of the fourth and fifth Karatkoff sounds. These problems and the normal increase in blood pressure associated with advancing age have made the delineation of hypertension in children complex.[8] With repeated measurements the prevalence of hypertension in children decreases from 9-13% with one measurement to less than 1% by the third measurement.[8,9,11] The blood pressure curves developed by several studies have been obtained from a small number of white children from semi-rural communities. Some evidence indicates that height, weight, and the presence of puberty may be more closely related to blood pressure than age.[10] Despite the arguments over the accuracy of blood pressure curves, they are useful in recognizing children at risk for hypertension.[11]

There appears to be a relationship between elevated blood pressure in children and hypertension in adults. The Muscatine study showed that though a single blood pressure measurement is not strongly predictive of future readings, some children continued to track at levels above normal.[8] The Bogalusa study, where meticulous attention was paid to variables that might affect blood pressure measurements, showed correlation coefficients of 0.67-0.73 in blood pressure at one year followup.[9] In a survey such as ours it is important to recognize that there is a wide range

TABLE II
ETIOLOGY OF HYPERTENSION CONSECUTIVE IN 47 CHILDREN SEEN IN A HYPERTENSION CLINIC

Age	< 2 yrs.	2-12 yrs.	12-21 yrs.	Totals
Number %	9(19%)	10(21%)	28(60%)	47(100%)
Diagnosis				
Coarctation Aorta	6	1	1	8(17%)
Renal Artery Stenosis	2		1	3(6%)
Renal Artery Thrombosis	1			1(2%)
Other Renovascular		1	2	3(6%)
Renal Parymhymal Dis Hypoplasia		1		1(2%)
Pyelonephritis		1	2	3(6%)
Hydronephrosis		1		1(2%)
Polycystic Dis.			1	1(2%)
Pheochromacytoma		1		1(2%)
Essential Hypertension		2	14	16(34%)
Labile Hypertension		2	3	5(11%)
HT assoc. with Obesity			4	4(9%)
		40%	75%	55%

in normal blood pressure in children and that those in the upper 2.5% of this survey would be two standard deviations above the normal in any large population survey.

Though the incidence of "organic" hypertension from cardiac and renal abnormalities is significant, essential hypertension does occur in children. Studies in pediatric and adult populations have demonstrated that essential hypertension may be familial or genetic in origin. Studies in twins, in natural verses adopted children, and in parent-child and in sibling-sibling relationships have demonstrated that as much as 60 percent of the relative contribution to blood pressure can be attributed to genetic influences.[4] Other familial variables such as race, height, weight, and possibly obesity, may also contribute to the development of hypertension in children.[10]

The strong influence of heredity on essential hypertension has contributed to the concept that essential hypertension may be due to some intrinsic "salt sensitive" abnormality. The demonstration that essential hypertension abates after renal transplantation also supports a role for the kidney in the generation of essential hypertension. Renin profiling, the response to salt restriction, potassium and/or calcium excretion after salt loading, and more recently sodium-lithium exchange and intracellular sodium flux in erythrocytes have been advocated as markers for patients with essential or "salt sensitive" hypertension.[5,6] Since most of these studies have been performed in adults, the possibility remains that abnormalities noted in hypertensive adults may not be the actual cause of the elevated pressure, but rather related to aging and/or the duration of hypertension. This has been most clearly demonstrated in renin profiling. Though initially advocated as a method of separating renovascular (high renin) hypertension from essential (low renin) hypertension, changes in plasma renin now appear to be determined by the patient's age rather than by an intrinsic or genetic abnormality.

From our experience, essential hypertension represents 55% of the hypertension in children; coarctation of the aorta 17%; renal parenchymal disease 13%; and renovascular hypertension 11%. This high incidence of cardiac hypertension is at variance with other studies and may represent unique referral patterns to specialty clinics at a children's hospital. However, this information would indicate that hypertensive infants should be screened carefully for cardiac causes. After puberty, the incidence of essential hypertension increases to 80% of all new cases. Essential hypertension can occur even in young children though its incidence in infants is unusual. Many investigators feel that labile hypertension in adolescents or hypertension in an obese child may be a marker for the development of fixed hypertension in adulthood.[8]

With our semi-urban and rural population, Arkansas reflects the national population distribution more closely than Northern urban centers. The mean blood pressures in our patient group is somewhat higher than in those of the National Center for Health Statistics. This may reflect the larger black population in Arkansas.

Because blood pressure increases with age and body size and because of the variability in the accuracy of blood pressure measurements in children, three measurements should be obtained on three different occasions. If all three of these measurements are above the ninetieth percentile for age on NCHS curves, a diagnosis of hypertension can be made. This child will then merit a more extensive evaluation. Cardiac and renal evaluations will identify most children with organic hypertension. Unless the child is younger than 12 years of age or has a diastolic blood pressure greater than 110 mm.Hg., elaborate laboratory evaluation is not indicated. The adolescent with essential hypertension should be treated symptomatically with appropriate diet, mild salt restriction, weight control and minimal drug therapy to lower the diastolic pressure to less than 90 mm.Hg., then followed closely.

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ANSWER—Electrocardiogram of the Month

DISCUSSION: This electrocardiogram was read by our adult cardiologists as showing sinus tachycardia versus atrial tachycardia with 2:1 conduction, right axis deviation, recent anterolateral infarction, and possible true posterior infarction. As it turned out, the ECG belonged to a three-week-old infant. A qualified pediatric cardiologist read the trace as showing sinus tachycardia, right axis deviation, prolongation of the PR interval, and ST-T abnormalities suggestive of ischemia. Obviously, clinical history would have helped the adult cardiologists substantially with this trace. At least, we would have known to whom to send it for proper interpretation. The feature editor wishes to thank Dr. Roberts of Conway, Arkansas for his help with this month's electrocardiogram.

Surgical Overview:

Continuous Peritoneo-Venous Shunting for Ascites

J. Michael Stair, M.D.,* and Jack D. Alston, M.D.**

Although ascites has been recognized for centuries, only recently has the pathophysiology of ascites become known. Treatment has always been difficult, largely due to difficulty in treating the underlying disease process which caused the ascites. This review will delve into causes and treatments of ascites with emphasis on peritoneo-venous shunting.

The word "ascites" is derived from the Greek word "askos," meaning bag. In the United States, ascites is usually secondary to cirrhosis and portal hypertension. Alcohol abuse and viral hepatitis account for most cases of cirrhosis. However, other causes of cirrhosis such as Wilson's disease, iron overload, schistosomiasis, drug reactions and alpha-1 antitrypsin deficiency must be considered when treating patients with cirrhosis.

The pressure in the portal venous system minus intraperitoneal hydrostatic pressure is the filtration pressure which drives fluid from the vessels. Obviously, the higher the portal pressure, the greater is the tendency for fluid to leave the vessels. Ascitic fluid has a higher protein content than other ultrafiltrates because liver capillaries are freely permeable to protein (hence, protein synthesized in the liver has free access to enter the circulation). This high protein content initially stabilizes the ascites, but when the hypoalbuminemia of chronic liver disease occurs, accumulation of ascitic fluid occurs readily.

The site of venous occlusion modifies the rate and extent of ascitic fluid accumulation. Post-sinusoidal obstruction occurs around the central veins due to compression by regenerative nodules in cirrhosis. It also may occur with right sided heart failure, Budd-Chiari syndrome and central vein thrombosis. Post-sinusoidal obstruction is more likely to induce ascites than are other causes of portal hypertension. Presinusoidal obstruction is much less likely to induce ascites, although other manifestations of portal hypertension such as esophageal varices are likely to occur. Other causes of ascites include chylous and postoperative ascites, pancreatic and nutritional problems, cardiac and renal disease, and malignancy.

Budd-Chiari syndrome is due to thrombosis of the hepatic veins. This may be spontaneous as in paroxysmal nocturnal hemoglobinuria and polycythemia rubra vera or may occur in patients taking oral contraceptives. Patients in whom tumor obstructs hepatic venous outflow may also develop Budd-Chiari syndrome. Chylous ascites may be due to retroperitoneal neoplasia, trauma, nephrosis, tuberculosis, filariasis, congenital intestinal lymphangiectasia or may be idiopathic. Milky, turbid fluid with elevated triglycerides is characteristic of chylous ascites as is the presence of fat globules seen after staining with Sudan III. The high mortality of chylous ascites (around 40%) is related to the underlying cause. Postoperative ascites may be chylous if lymphatics are damaged during retroperitoneal dissection. Postoperative ascites is not uncommon in the cirrhotic patient, especially those receiving shunts for esophageal varices or in cirrhotic patients undergoing a retroperitoneal dissection.

Pancreatic ascites is usually diagnosed by noting an elevated amylase in the ascitic fluid. It is usually due to leakage of pancreatic juice from a ductal disruption or pseudocyst. Treatment usually requires direct surgical intervention. Likewise, cardiogenic ascites is usually treated by attacking the underlying cause. The most common causes of cardiogenic ascites are constrictive pericarditis and tricuspid valve disease.

Nephrogenic ascites is more common in patients with renal failure. Here, ascites must be differentiated from the hepato-renal syndrome.[1,2] The fluid in nephrogenic ascites is exudative with a high protein and LDH content. Malignant ascites is usually secondary to GI or ovarian cancer. Usually the diagnosis can be made on cytological exam of the fluid. Ascites from a malignant source may be particularly difficult to control.[3] Diuretic therapy is usually less effective than when used for cirrhotic ascites. Paracentesis

*Pulaski Surgery Clinic, P.A., 2007 Fendley Drive, North Little Rock, Arkansas 72114.
**504 West Emma, Springdale, Arkansas 72765.

is usually ineffective due to rapid reaccumulation of the fluid. Other causes of ascites include amyloidosis, myxedema and malnutrition. Table 1 summarizes the various causes of ascites.

TABLE 1
CAUSES OF ASCITES

Cirrhosis
Budd-Chiari syndrome
Chylous ascites (trauma, tumor, nephrosis, TB, filariasis, congenital)
Pancreatic
Cardiogenic
Nephrogenic
Malignancy
Miscellaneous (Amyloid, malnutrition, myxedema)

The treatment of ascites should also consider its prognosis and sequelae, i.e., the natural history of ascites. Ascites is far more serious than a mere cosmetic problem. Ascites most often indicates severe liver disease. Once manifest, one-half of the patients will die within 6 months and within 1 year two-thirds of patients will die.[4,5] Over zealous treatment of ascites may actually lead to the patient's death. Complications of treatment include hypokalemic alkalosis, azotemia and hepatic encephalopathy. Variceal hemorrhage rarely occurs in the absence of ascites or in those patients who have not had a prior bleeding episode.[6] Hepato-renal syndrome rarely occurs in those patients without ascites. Compression of the upper gastrointestinal tract may lead to anorexia which may complicate existing nutritional problems. The volume of ascitic fluid may be so great as to prevent adequate diaphragmatic excursion resulting in atelectasis and respiratory compromise. Increased intra-abdominal pressure due to ascites may predispose to hiatal, inguinal and umbilical hernias. The high protein content of ascitic fluid may allow for severe peritonitis.[7]

MANAGEMENT

The management of ascites should initially be medical except under extreme circumstances. Bedrest and salt restriction are the mainstay of therapy, but spironolactone and/or loop diuretics may be required. Usually no more than about a liter of ascites can be excreted in a 24 hour period. Urinary losses greater than 1.0 kilogram per day occur at the expense of edema and intravascular fluid.[8] One must be mindful that encephalopathy is diuretic induced in about 20% of patients. Paracentesis is primarily a diagnostic procedure but it may also be used for relief of abdominal distention causing respiratory compromise, for reduction of tense ascites which complicates management of hernias, or prior to abdominal surgery.

Peritoneovenous shunting of ascitic fluid has gained wide acceptance in the treatment of refractory ascites.[9-20] The continuous peritoneovenous shunt should be considered for patients with refractory ascites, hepato-renal syndrome and massive ascites with respiratory compromise. Failure to adhere to therapy, repeated hospitalizations, repeated paracentesis, consideration of abdominal or hernia surgery, and malignant ascites are relative indications for peritoneovenous shunting.

Contraindications of peritoneovenous shunting include severe alcoholic hepatitis with jaundice, encephalopathy, acute tubular necrosis, peritonitis, severe coagulopathy, severe cardiac disease and previous bleeding from esophageal varices. However, a peritoneovenous shunt may be helpful in managing ascites which occurs after a portosystemic decompression procedure. Cardiac failure frequently can be controlled enough to allow for peritoneovenous shunting and is only a relative contraindication.

A thorough preoperative evaluation should be undertaken prior to peritoneovenous shunting. History should include information on prior operations, bleeding tendencies, lung or cardiac disease, edema, jaundice, allergies, and previous bouts of bleeding, encephalopathy or coma. Physical exam should include weight, measurement of abdominal girth, signs of cardiac or renal failure, and the presence of petechia, ecchymoses or pleural effusion. Laboratory exam should include CBC, platelet count, PT, PTT, electrolytes, BUN, creatinine, liver function tests, fibrin split products, and fibrinogen. Paracentesis should always be performed prior to consideration of peritoneovenous shunting to try to elucidate the nature and cause of ascites and to assure the absence of active infection. Ascitic fluid should be tested for specific gravity, LDH, triglycerides, amylase and protein. Cultures and gram stain of the fluid should be done as well as cytology of the fluid if malignancy is suspected. A chest X-ray should be obtained to further evaluate underlying pulmonary or cardiac pathology. An ECG, arterial blood gases and pulmonary function tests

may also be necessary in selected patients. A liver biopsy should also be performed to rule out active alcoholic hepatitis should this be a diagnostic consideration.

The mechanics of peritoneovenous shunting are really quite simple. One end of a silastic tube is placed into the peritoneal cavity and the other end near the superior vena cava–right atrial junction via the internal jugular vein. This conduit allows ascitic fluid to move from the abdomen into the venous system thereby allowing the body to excrete it. The force required to move the fluid is supplied by breathing. As the diaphragm descends, the intra-abdominal pressure decreases. This constantly moves the ascites from a high pressure area to a low pressure area. An important feature of most peritoneovenous shunts is a one-way valve placed midway between the peritoneum and the venous system. This valve allows for one-way movement of fluid and does not allow blood to flow backwards in the shunt. Although different types of shunts are available, we prefer the Denver* peritoneovenous shunt because of its superior one-way valve and also because low flow, medium flow and high flow shunts are available.

PROCEDURE

The choice of anesthesia is largely an individual matter. Although local anesthesia is used by many groups, we prefer general anesthesia, when possible, for several reasons. The position necessary for safe dissection of the internal jugular vein is frequently difficult for the patient to maintain and movement during the procedure increases the risk of bleeding or damaging adjacent structures. Also, in a patient with massive ascites, the supine position may not allow for adequate ventilation. Finally, creating the long subcutaneous tract required for the shunt may call for high doses of lidocaine. Lidocaine is metabolized by the liver and toxic levels of lidocaine may occur at lower doses in patients with impaired hepatic function. However, we do not hesitate to use local anesthesia when general anesthesia is not feasible.

Three small incisions are made: an abdominal incision centered in the anterior axillary line below the rib margin on the right, an incision over the rib cage where the valve will be placed, and an incision between the sternal and clavicular heads of the sternocleidomastoid muscle. The right side is usually used, but if the liver is very large or the patient has had previous right upper quadrant surgery, the left side is used. We prefer to then make the subcutaneous tunnel for the shunt, place the shunt into the tunnel and secure the valve to the rib cage fascia prior to entering the abdomen. (Fig. 1) The valve is secured over

*Trademark, Storz Corporation.



Figure 1.

the rib cage to allow the patient to press the valve several times per day to keep it patent. The internal jugular vein is then isolated between vessel loops. The abdominal muscles are split and two purse string sutures of 2-0 polypropylene are placed in the transversalis fascia and peritoneum. A stab incision is then made into the peritoneum and ascitic fluid is removed slowly and then the volume of fluid is replaced with saline. This reduces the amount of procoagulant present in the ascites and we feel that this maneuver reduces bleeding tendencies and disseminated intravascular coagulation postoperatively.[21] After this, the purse string sutures are tied and the shunt secured to the purse string sutures. (Fig. 2)

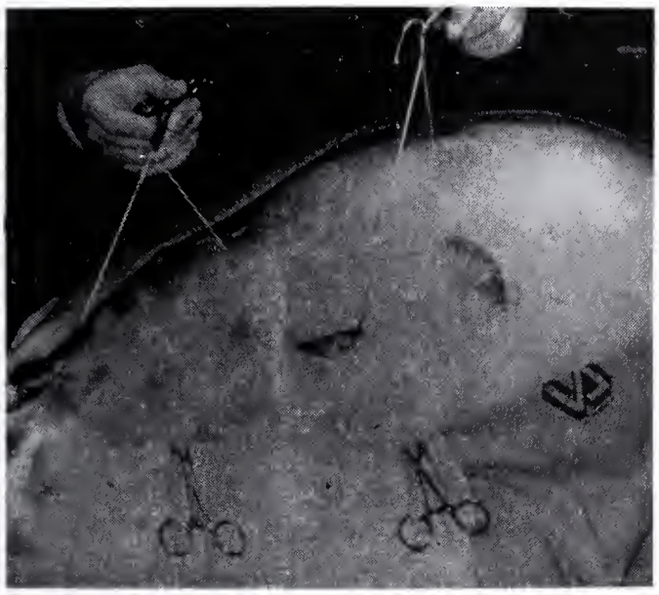


Figure 2.

The upper end of the shunt is then measured and cut to the level of the third rib to be certain that it will be placed in the superior vena cava. (Fig. 3) A purse string suture is placed in the jugular vein with 4-0 and 5-0 polypropylene, then the shunt is placed into the vein and secured via the purse string suture. Prior to this maneuver, the patency of the shunt is assured by pumping fluid through the valve by pressing on it. This will also clear the shunt of air to prevent air embolus. A chest X-ray is obtained to assure proper positioning and the wounds are closed.

Postoperatively, furosemide is administered to insure maximal diuresis and to prevent pulmonary edema.[10,11,22] An abdominal binder and deep breathing exercises may increase flow through the shunt. A low sodium diet (1-2 grams per day) is allowed on the first postoperative day.



Figure 3.

Hypokalemia secondary to diuresis may be minimized with the use of aldactone, but potassium supplementation in the early postoperative period is frequently necessary. Clotting parameters including fibrinogen and fibrin split products as well as potassium, platelet count and hematocrit should be checked frequently in the first 48 hours postoperatively.

COMPLICATIONS

Phrenic and recurrent laryngeal nerve injury and air embolus can occur during the procedure, but are rare. Pulmonary edema, congestive heart failure and hepatic coma are also early complications. Hypokalemia is not at all unusual following diuresis especially in those patients who have a secondary hyperaldosteronism. Potassium supplementation is required for correction. Pneumothorax can occur if dissection of the internal jugular vein is carried too deeply in the neck but this is rare. Ascitic fluid leakage is a technical problem which usually requires tighter closure.

Cardiac failure can occur in patients with previously unrecognized cardiac disease. It usually responds to digitalis, diuretics, low salt diet and bed rest. Flow through the shunt is slowed until venous pressure decreases. Flow can be further reduced by removing the abdominal binder, assuming an erect position and ceasing respiratory exercises.

Clinical bleeding diathesis is not very common after peritoneovenous shunting, but chemical coagulopathy is not at all uncommon.[2,11,23] Patients with liver disease may have coagulopathy due to inability to synthesize coagulation fac-

tors, and thrombocytopenia secondary to hypersplenism. Ascitic fluid contains fibrin split products, which act as an anticoagulant, and a chemical disseminated intravascular coagulation is demonstrable in 5-50% of patients after placement of peritoneovenous shunt. This usually is manifested by an increase in PT, PTT and fibrin split products accompanied by a decrease in fibrinogen and platelet count. Should the patient have a clinical bleeding diathesis unresponsive to fresh frozen plasma and platelet transfusions, consideration should be given to ligating the shunt. This can be done at the bedside using local anesthesia and a heavy silk suture. Serious bleeding is more common with very severe liver disease, i.e., in patients with jaundice or encephalopathy.

Recurrent ascites usually indicates shunt occlusion. Technical error, lack of patient compliance in daily compression of the valve or superior vena cava obstruction are the most common reasons for shunt occlusion. Technectium[99] sulfur colloid placed intraperitoneally followed by gamma camera scanning has been useful to ascertain shunt patency.[24,25] Shunt occlusion may require repositioning or replacement. The purse string suture technique used in the internal jugular vein instead of ligation of the jugular vein has lessened the complication of clot propagation and subsequent superior vena cava syndrome.

Although this list of complications seems long and impressive, most complications are relatively rare. The most frequently seen clinical complication is bleeding problems after shunt placement. When major and minor complications are included, most series report 20-30% complication rate, which seems acceptable considering the high risk patient population.

In summary, peritoneovenous shunting is a useful procedure in the patient with massive intractable ascites, regardless of the etiology of ascites. The shunt may allow significant palliation in patients with dismal prognosis from cancer or liver disease and may improve therapy in other forms of ascites.

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Radiology Perspective:

A New Technique in the Treatment of Pulmonary Embolism

David T. Milton, M.D.,* David L. Harshfield, M.D.,** John E. Reifsteck, M.D.,***
F. Keith Bell, M.D.,**** and E. J. Ferris, M.D.*****

ABSTRACT

In addition to anticoagulants and thrombolytic agents, placement of a mechanical filter in the inferior vena cava is an effective method of preventing recurrent emboli from deep venous thrombosis. This used to require abdominal surgery or dissection of a peripheral vein. New filter devices are now being developed that can be placed percutaneously through a venous catheter. Based on our experience at the University of Arkansas for Medical Sciences, we feel that the percutaneous filter shows great promise as an effective, simple, and relatively safe therapy for prevention of pulmonary emboli.

The annual incidence of pulmonary embolism in the United States is estimated to be as high as 750,000, with an overall annual mortality of approximately 20%.[1] This high incidence is accompanied by a recurrence rate that approaches 60%, including a fatal recurrence rate of 22% without treatment.[2] Thus pulmonary embolism is a common, potentially life-threatening process which necessitates an aggressive approach towards diagnosis and treatment, since accurate diagnosis and early treatment have been shown to increase patient survival.[3]

With this in mind, one must recognize that pulmonary embolic disease is basically a complication of deep venous thrombosis; 95% of these thrombi originate below the level of the renal veins, particularly in the veins of the lower extremities. Thus attention should be directed toward the primary disease process, deep venous thrombosis, as well as its complication, pulmonary embolic disease.[4]

The mainstay of treatment for both pulmonary embolism and deep venous thrombosis is anticoagulation, which usually prevents the formation of new thrombi while hematologic defense mechanisms can lyse existing thrombi.[5] Also, thrombolytic drugs have been successfully used to dissolve large emboli. These pharmacologic regimens are contraindicated in some patients, however. In these patients, as well as certain others, mechanical interruption of the inferior vena cava is the preferred method for preventing deep venous thrombi from becoming pulmonary emboli. While there are no standard criteria for the mechanical interruption of the inferior vena cava, most groups throughout the country feel that at least rudimentary criteria should be used. Indications for inferior vena cava interruption include:

1) Patients with thromboembolic disease who have a contraindication to anticoagulation, for example those who have had recent surgery
2) Recurrent pulmonary emboli despite adequate anticoagulation therapy
3) Radiographic demonstration of large, potentially fatal deep venous thrombosis
4) Patients with chronic, recurrent pulmonary embolism with associated pulmonary hypertension and cor pulmonale
5) Patients who have had an episode of massive pulmonary embolism[6]

Over the years a variety of methods have been used to interrupt the inferior vena cava. The first, reported by O'Neill in 1945, was ligation of the inferior vena cava.[7] This was not entirely successful, however, as collateral vascularization allowed a path for further embolization to the lungs.[8] Methods for incomplete occlusion of the inferior vena cava were then tried, including

*Instructor, Diagnostic Radiology, Department of Radiology, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 556, Little Rock, Arkansas 72205.
**Assistant Professor, Diagnostic Radiology, Department of Radiology, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 556, Little Rock, Arkansas 72205.
***Assistant Professor, Diagnostic Radiology, Department of Radiology, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 556, Little Rock, Arkansas 72205.
****Instructor, Diagnostic Radiology, Department of Radiology, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 556, Little Rock, Arkansas 72205.
*****Professor and Chairman, Department of Radiology, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 556, Little Rock, Arkansas 72205.

suture filters,[9] suture partitioning,[10] bead compression,[11] and external clips.

Currently the most popular of these is the placement of a fenestrated clip around the inferior vena cava.[12] All of these methods require major abdominal surgery under general anesthesia, often in seriously ill patients. The reported operative mortality averages about 10%, with average rates of recurrent emboli and fatal recurrent emboli of 6% and 2%, respectively.[13]

A favorable alternative to inferior vena cava interruption via abdominal surgery is the transvenous placement of a detachable device that serves as a permanent barrier to emboli. Different types have included a variety of sieves, balloons, clips, and umbrellas.[14,15,16,17] The Greenfield filter (Figure 1) has proven quite efficacious and is still in current use. While placement of these devices spares the patient a major surgical procedure, it still has drawbacks: the technique of dissection of the internal jugular or femoral vein involves certain risks as well as patient discomfort.



Figure 1.
The Greenfield inferior vena cava filter.

The simplest, safest, and usually most expeditious way of delivering a filter device into the inferior vena cava is the percutaneous transcatheter approach. Several different filter designs have been developed, including the Amplatz umbrella and the Cook bird's nest (Figure 2), which are being used on an investigational basis. The University of Arkansas for Medical Sciences is one of seven institutions nationwide currently using the bird's nest filter.

At our institution, the entire filter placement procedure is performed in the angiographic suite under local anesthetic, often immediately following phlebographic demonstration of deep venous thrombi. A femoral vein approach is usually used, but the external jugular may be catheterized if approach from below is contraindicated (for example, if large thrombi are present in the iliac veins or distal inferior vena cava). A catheter sheath is first placed in the selected vein, through which the catheter with attached filter introducer is passed into the vein. Under constant fluoroscopic guidance, the tip of the introducer is positioned so that the filter will lie just below the renal veins. The filter is then discharged from the introducer into the inferior vena cava. It is anchored into the wall of the inferior vena cava by the fine wire hooks on its legs. The final position is confirmed fluoroscopically, by immediate radiograph of the abdomen before the patient leaves the department (Figure 3), and by a follow-up limited CT scan of the abdomen. Total procedure time is usually twenty to thirty minutes.

The fine wire mesh of the bird's nest traps emboli, preventing them from coursing cephalad to the lungs. In addition, this filter apparently also reduces the effective diameter of the inferior vena cava, which further hinders embolic migration. This is shown in the post-placement CT scan and Vena cavagram (Figure 3).

Over 120 bird's nest filters have been placed in humans since their development. At UAMS, we have placed filters in seven patients with no immediate serious complications. As long-term follow-up is obtained, we expect the percutaneous filter to be proven an effective treatment for pulmonary emboli.



Figure 2.

The bird's nest and Amplatz filters.



Figure 3.

Radiographs of filter in place, with and without contrast, and post-placement CT scan.

CONCLUSION

A rapidly performed, relatively simple approach to the interventional management of patients with pulmonary embolism is being investigated. This new procedure spares the patient the discomfort and morbidity associated with older methods. Our initial impression is that the effectiveness of the percutaneous filter will compare favorably with those placed via abdominal surgery and venous cutdown.

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EDITORIAL

Hepatitis

Alfred Kahn, Jr., M.D.

Hepatitis clinical research is adding to our fund of knowledge about inflammatory liver disease at a steady pace. The impetus for current hepatitis research was the considerable epidemic of hepatitis during World War II. Considerable strides in understanding viral hepatitis have been made in the past 40 years—but there is still much to be learned.

Rakela, Lange, Ludwig and Baldus have reported on "Fulminant Hepatitis: Mayo Clinic Experience With 34 Cases" (Mayo Clinic Proceedings, Volume 60, Page 289, May 1985). This is an extremely interesting article. The authors attribute fulminant hepatitis as usually being due to virus or drug reactions and state that it is ordinarily characterized by "acute impairment of liver function, presence of hepatic encephalopathy, and absence of pre-existing liver disease". They cite an interesting statistic to the effect that only about 1% of the cases of acute viral hepatitis become fulminant hepatitis, whereas drugs probably cause 60% of the cases of fulminant hepatitis. Other authorities indicate that the death rate in fulminant hepatitis is 75% or more. This article was a review of 34 cases which had been examined at the Mayo Clinic, 19 of whom were female and 15 of whom were male, varying in age from 4 months to 62 years. In the authors' series, the commonest cause of fulminant hepatitis was non-B hepatitis. Hepatitis-B and drugs each were responsible for an equal number of deaths and were in second place. The pathologic finding at autopsy in these cases was that of massive hepatic necrosis. They report that four livers contained regenerative nodules. On microscopic examination, they found that there was a multilobular collapse, invasion by inflammatory cells and growth of the ductules. Bile stasis was also noted, as was hemorrhage. Rakela, et al., believed that the poor prognosis in their group of patients stemmed from the fact that they had older patients and a large number of their cases were non-B hepatitis. The term "non-B hepatitis" to them implied non-A, non-B hepatitis and possibly other disorders—but mostly non-A, non-B hepatitis. The drugs that they felt were particularly involved in the Mayo Clinic series were halothane, nitrofurantoin, phenytoin, and alpha-methyldopa. Wilson's disease was also present in three of their cases, and it is said that a low serum ceruloplasmin is often found, and is attributable to the inability of the diseased liver to manufacture ceruloplasmin; the serum copper concentration terminally elevates.

There continues to be a considerable number of papers concerning post-transfusion hepatitis. Koretz, Stone, Mousa and Gitnick have published an article entitled "Non-A, Non-B Post-transfusion Hepatitis—A Decade Later" (Gastroenterology, Volume 88, Page 1251, May 1985). The authors studied 69 patients with a diagnosis of non-A, non-B hepatitis. The diagnosis was made between 1972 and 1978. Koretz, et al., presume, as do most students of liver disease, that non-A, non-B hepatitis is of viral origin. In studying the patients, they used an elevated alanine aminotransferase as a harold sign; and, the patients had to have an absence of immunoglobulin M-specific antibody to hepatitis A, hepatitis B surface antigen, or hepatitis B core antibody. Of their 69 patients, they state that 46 who had post-transfusion hepatitis developed chronic hepatitis; it is interesting that they state "virtually all patients diagnosed as having chronic hepatitis have been asymptomatic." Four patients out of their 69 had definite proof of cirrhosis as time went by. Of particular

interest to practicing physicians is the reminder by Koretz, et al., that chronic liver disease has diminished in frequency where blood banks have changed to a volunteer system. The authors further report that in post-transfusion hepatitis there is likely to be abnormal liver function tests for many years in some cases—constant or sporadic; the danger here is that it is difficult to predict which of these cases will develop cirrhosis of the liver as most of the cases are symptom-free.

It is difficult to make an accurate prognosis in acute viral hepatitis. The majority of cases improve but some cases develop chronic hepatitis and even cirrhosis. Wiedmann, Brattig, Diao, Schomerus, Dolle and Berg have published on a new test; the information has been published in an article entitled "Serum Inhibitory Factors (SIF) are of Prognostic Value in Acute Viral Hepatitis" (The Lancet, Number 8424, Page 309, Volume I for 1985). Wiedmann, et al., state that there are immunosuppressive serum factors which have been known to be present in patients who have acute viral hepatitis. The authors worked with what they described as an albumin-associated lipophilic molecule which they call SIF; they state "this inhibitory factor (or factors) has been shown to interfere with the intermediate phase of resting T and B lymphocytes but not of already activated T and B cells. A good correlation was found between the disappearance of SIF and the complete recovery of patients with acute viral hepatitis, and it has been suggested that persistence of these factors implies continuing viral stimulation." Wiedmann, et al., studied 81 patients; in a group of patients who had completely recovered from viral hepatitis, the SIF frequency decreased week by week; it was maximal at 64% and fell to 5% after 24 weeks. SIF activity seemed to antecede a fall in the ALT test. In cases of protracted hepatitis, at the end of 52 weeks, there was a frequency rate of 44% positive for SIF and no cases of positive SIF occurred in the cases of resolving hepatitis. The article makes a positive statement that a progressive fall in SIF activity indicates that there will be a complete recovery from viral hepatitis—and, as noted above, this fall in SIF usually antecedes a fall in the ALT levels. Wiedmann and his colleagues suggest that protein-like substances like SIF which have an apparent immuno-regulatory function may tend to protect the liver from an immune attack; they also point out "excessive SIF production could delay elimination of viral antigens as a consequence of the suppressed immune response. Our finding of complete absence of SIF activity in patients with autoimmune chronic active hepatitis supports this concept."

One type of chronic active hepatitis is due to an autoimmune process. Cases of autoimmune chronic active hepatitis are usually treated with adrenal steroids; they have also been tried on azathioprine. There has been some question in the literature as to the efficacy of azathioprine. The use of azathioprine has been studied by Stellon, Portmann, Hegarty and Williams in "Randomised Controlled Trial of Azathioprine Withdrawal In Autoimmune Chronic Active Hepatitis" (The Lancet, Number 8430, Page 668, Volume I for 1985). The authors reported that previous trials had indicated that azathioprine, 50 mg. per day and prednisolone, 10 mg. per day had the same treatment value as prednisolone 20 mg. per day—and it was felt that, in this treatment program, azathioprine had a so-called steroid-sparing effect. Stellon and his associates studied 50 patients with autoimmune chronic active hepatitis. Their cases were proved to be correctly categorized by both laboratory tests and histiologic studies. In one group of patients, the azathiprine was discontinued and the prednisolone was continued; in another group, both drugs were continued. In the group in which the azathioprine was discontinued (27 patients), there were 8 relapses, whereas in the group which continued azathioprine and prednisolone (23 patients), there was only one relapse. It seems evident that azathioprine enables the patient with autoimmune chronic active hepatitis to stay in remission on a smaller dose of prednisolone and thus have a better chance of avoiding the side effects of prednisolone, such as osteopenia. It is somewhat of an anomaly that azathioprine is effective when given in conjunction with prednisolone but by itself, it is said to be ineffective. The authors do not have a good explanation for this, but they postulate that the absence of effect of azathioprine by itself may be due to the fact that damaged liver parenchyma cells, in some manner, reduce the immunosuppressive powers of azathioprine. In any event, azathioprine is apparently valuable because of the lowered maintenance dose of adrenal steroids necessary to accomplish a therapeutic effect in autoimmune chronic active hepatitis.

"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Augustus M. Zell, M.D. — Pioneer Radiologist

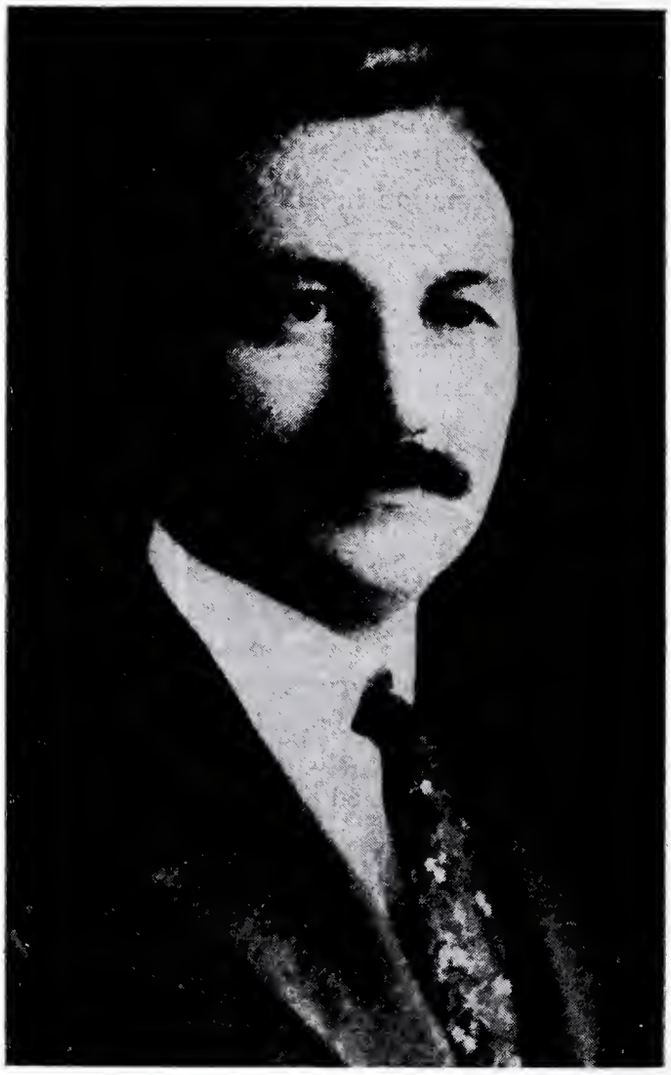
Max L. Baker, Ph.D.*

The 33rd annual announcement (1911-1912) and catalog of the Departments of Medicine and Pharmacy of the University of Arkansas lists training in Electrotherapeutics and Roentgenology. The faculty in Electrotherapeutics and Roentgenology at this time was made up of A. M. Zell, M.D., and L. D. Regan, M.D.

Augustus M. Zell was born in Wuertenberg, Germany, in 1882, and educated in American institutions. He was a 1905 graduate of Washington University School of Medicine in St. Louis. Dr. Zell practiced medicine in that city for a time before moving to Little Rock. The records of the Arkansas Medical Society list Dr. Zell as a new member of that group in October, 1907. He joined the Pulaski County Medical Society in December of that same year.

Dr. Zell remained an active member of the County Society for many years and served as its vice president in 1914. Over these early years of Radiology, Dr. Zell presented several papers to the Society on the use of the X-ray. The March 4, 1912, minutes record that "Dr. Zell, the essayist for the evening, read a very interesting paper entitled 'The X-ray in diagnosis' especially treating of lesions of the kidney, tuberculosis of the lungs, and gastric abnormalities. He illustrated his paper by exhibiting a number of excellent skiagraphs of portions and organs of the body".

Dr. Zell joined the faculty of the University of Arkansas Department of Medicine first as an assistant to the Chair of Pathology in 1907. He moved to the Electrotherapeutics position in 1911 and remained as the primary faculty member in Electrotherapeutics through the 1917 session. From that time he no longer appeared on the faculty roster, though he remained very active in central Arkansas medical circles.



Augustus M. Zell, M.D.

Dr. Zell was a member of the medical firm of Scarborough, Ogden, Zell and Judd. This group, along with Dr. R. B. Moore, erected Trinity Hospital in 1924. Trinity Hospital and Clinic pioneered the prepayment medical plan in Arkansas. These plans later developed into the medical insurance plans of today. Interestingly, Dr. Zell and his colleagues were initially censured by members of the local medical community for this work. Dr. Zell remained an active member of the Trinity Hospital organization until his death in April of 1937.

*Department of Radiology, University of Arkansas for Medical Sciences.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

CARDIOVASCULAR INSTITUTE SYMPOSIUM

Presented by Little Rock Cardiovascular Institute and Baptist Medical Center, *February 22,* Shuffield Auditorium at Baptist Medical Center, Little Rock. For further information call (501) 227-2672.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC-South Arkansas.
Colposcopy-Pap Smear Clinic, fourth Tuesday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, second and fourth Thursday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Gyn-Pathology Conference, second Friday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Pediatric Conference, second and third Friday, 12:30 p.m. to 1:30 p.m., (second Friday, Warner Brown Hospital, third Friday, Union Medical Center).

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology-Mortality Conference, second Thursday, 3:00 p.m., Conference Room, Building 1.
Radiology Conference, third Thursday, 1:00 p.m., Conference Room, Building 1.
ICU Lecture, second Friday, 1:30 p.m., Conference Room, Building 1.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pulmonary Conference, each Monday, 3:00 p.m., Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Genetic Conference, each Wednesday, 1:00 p.m., Annex Conference Room.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neuroscience Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
General Pediatric Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.

Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Surgery Conference, each Thursday, 7:30 a.m. to 8:30 a.m., Conference Room #1.
Pathology Conference, first, second, fourth and fifth Thursday, 12:00 noon to 1:00 p.m., Pathology Library.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #2.

LITTLE ROCK — ST. VINCENT INFIRMARY

Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
General Medicine Journal Club, first and third Thursday, 12:00 noon to 1:00 p.m., Medical Affairs Conference Room.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Ed II Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interhospital GI Problems Conference, first Monday, 6:00 p.m., St. Vincent Infirmary, Classroom 3, Education Wing.
OB/Gyn Grand Rounds, each Wednesday, 7:30 a.m., UAMS Ed II Building, Room G/135.
Mental Health Services Grand Rounds, dates TBA. 10:00 a.m., Arkansas Mental Health Services Administration Building, Third Floor Conference Room.
Psychiatry Grand Rounds, each Thursday, 12:00 noon, UAMS Child Study Center Auditorium.
Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Ed II Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS Ambulatory Care Center Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Ed II Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Ed II Building, Room G/135.
Arkansas Academy of Pathology, first Wednesday, 5:30 p.m., Coy's Restaurant.
Surgical Science Conference, each Saturday, 8:00 a.m., Ed II Building, Room G/131.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Psychiatry Service Lecture Series, each Wednesday, 1:00 p.m., NLRVA, Building 170.
VA Medicine Service Teaching Conference, each Monday, 3:30 p.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.
VA Surgery Tumor Board, each Tuesday, 1:00 p.m., LRVA, Room 2D109 and 2D114.
St. Vincent Urology Grand Rounds, first Tuesday, 5:30 p.m., St. Vincent Infirmary, #159 Education Building.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC-SOUTHWEST

Tumor Conference, November 6 and December 4, 7:00 a.m., St. Michael Hospital.
Chest Conference, November 20, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

THINGS TO COME

February 22

Arkansas Cardiovascular Institute Symposium. Shuffield Auditorium, Baptist Medical Center, Little Rock, Arkansas. Sponsored by the Arkansas Cardiovascular Institute and Baptist Medical Center.

March 24-29

Counseling Strategies for Physicians. Oahu, Hawaii. Sponsored by the University of Texas at Tyler and the University of Texas Health Science Center at Houston. Program is designed to introduce the latest techniques and research findings on matters that influence doctor-patient relationships. The program is approved for 17 hours AMA/PRA Category I credit. Registration fee is $325.00. For further information call 1-800-332-8747 and specify Program Code 975 DLB.

April 2-5

Symposium on Prevention of Infections in Pediatric Office Practice and Sixth Annual Pediatric Infectious Disease Seminar. Sponsored by the Department of Pediatrics, University of Texas Southwestern Medical School, Health Science Center, at Dallas. Hyatt Regency Hotel, New Orleans, Louisiana. 23 hours Category I, AMA. Registration Fee: Pre-registered $300.00; $225.00 residents; on site registered $325.00; $250.00 residents. For further information contact Marian Troup, Department of Pediatrics, University of Texas Southwestern Medical School, Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235; telephone 1-214-688-3439.

April 17-19

Forty-Eighth Annual Meeting of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society. Broadwater Beach Hotel in Biloxi, Mississippi. 8 hours Category I, AMA. For more information contact Ben A. Davis, Jr., CAE, Louisiana-Mississippi Ophthalmological and Otolaryngological Society, Post Office Box 12314, Jackson, Mississippi, 39236-2314; telephone 1-601-956-7787.

PERSONAL AND NEWS ITEMS

1985 CONVENTION EXHIBITS

Dr. John Crenshaw of Pine Bluff, Chairman of the Scientific Exhibits Committee, invites members of the Society to present exhibits at the Society's Annual Convention. The meeting will be held April 17-20 at the Excelsior Hotel and Statehouse Convention Center in Little Rock.

Exhibiting hours for the convention will be from 10:00 a.m. to 5:00 p.m. on Thursday, April 17, from 8:00 a.m. to 5:00 p.m. on Friday, April 18, and from 8:00 a.m. to 12:00 noon on Saturday, April 19. The exhibit hall will be available for exhibitors to set up their displays on Wednesday afternoon, April 16, and exhibit materials must be removed on Saturday afternoon, April 19.

Applications for exhibit space may be obtained from the headquarters office in Fort Smith. Telephone number outside Fort Smith is 1-800-542-1058.

DR. BURGE VISITS SOCIETIES

Dr. Jack Burge of Lake Village, president of the Arkansas Medical Society, has been active in traveling around the state visiting county medical societies. Most recently, Dr. Burge was in Stuttgart and Harrison, speaking to physicians about Medical Society activities and changes in health care. Dr. Burge also has meetings scheduled in Paragould and Forrest City.

SOUTHWEST MEDICAL CHAPTER ELECTS DR. HART

Dr. Sybil R. Hart of Blytheville was recently elected president of the Southwest Chapter of the

American College of Utilization Review Physicians (ACURP) at its annual seminar in Dallas-Fort Worth. Dr. Hart is director of Clinical and Anatomic Laboratories for the Osceola Memorial Hospital in Osceola, and Chickasawba Hospital in Blytheville.

ACURP, a national non-profit association, educates physicians, other healthcare professionals and the general public in cost containment, risk management, quality assurance, payment methods, utilization review, peer review and related topics.

DR. LANGE LEADS SEMINAR

Dr. John L. Lange has returned from New York City where he lead a seminar at the third meeting of the World Congress of Urologists. His topic was "Stone Surgery without Incision". Dr. Lange is associated with the Holt-Krock Clinic in Fort Smith.

DR. VANDER SCHILDEN AND DR. McANDREW APPOINTED TO STAFF

The University of Arkansas for Medical Sciences has announced the appointment of two physicians to its orthopaedic staff—Jack L. Vander Schilden, M.D., and Mark McAndrew, M.D.

Dr. Vander Schilden is affiliated with the Arkansas Children's Hospital and John L. McClellan V.A. Hospital.

Dr. McAndrew is a member of the newly-formed multi-specialty trauma team at the University of Arkansas for Medical Sciences as head of the Section on Trauma.

DR. FARRIS AND DR. SALTZMAN NAMED TO BOARD OF APPEALS

Dr. Guy Farris and Dr. Ben Saltzman of Little Rock were recently appointed by Governor Bill Clinton to the Long Term Care Facility Advisory Board which will hear appeals concerning licensure and certification of nursing homes and administrators.

DR. WILSON ELECTED TO MEMBERSHIP

Dr. Steven K. Wilson, a urologist with the Holt-Krock Clinic in Fort Smith, has been elected to membership in the Societe International d'Urologie (SIU) at the organization's recent World Congress in Vienna, Austria. Dr. Wilson is chief of Urology at Sparks Regional Medical Center, Fort Smith, and a member of the Board of Trustees at the Crawford Memorial Hospital, Van Buren.

PHYSICIANS SPEAK AT SEMINAR

Drs. Marion M. Church, Michael T. Pilcher, and Robert G. Vogel recently spoke at the second "Well Woman Seminar" at the Riverfront Hilton Inn in North Little Rock. The seminar was sponsored by the Memorial Hospital Gynecology Unit and the Memorial Hospital Volunteer Auxiliary in North Little Rock.

DR. HAMILTON HONORED

Dr. Ralph B. Hamilton was recently honored at the Wonder High School Alumni annual scholarship and awards banquet in West Memphis.

DR. VOLLMAN APPOINTED TO BOARD

Dr. Don Vollman, Jr., of Jonesboro, has been appointed to the State Board of Health by Governor Bill Clinton. Dr. Vollman replaces Dr. Asa Crow of Paragould.

DRS. NESTRUD, SOTOMORA, AND CONE SPEAK

Speakers for the Alice G. Beard Neonatology Conference held recently at St. Vincent Infirmary included Drs. Richard Nestrud, Ricardo Sotomora, and Michael Cone.

OSTEOPOROSIS DISCUSSED

Drs. J. Gregory Booker, Robert S. Bell, A. Scott Hardin, and Gregory S. Smart recently participated in the Second Annual Women's Seminar. The seminar was sponsored by the Union Medical Foundation and Union Medical Center Health Education Department, El Dorado.

DR. McGOWAN COMPETES IN TRIATHLON

Dr. Bob McGowan, Jr., of Little Rock, recently competed in the 1985 Hawaii Ironman Triathlon. Dr. McGowan completed the marathon in 12 hours and 22 minutes.

DR. MARTIN PARTICIPATES IN MEDICAL SYMPOSIUM

Dr. William C. Martin of Fayetteville was one of nearly 100 physicians throughout the United States and Canada who were invited to participate in a medical education symposium on peptic ulcer disease and gastric cytoprotection held recently in Monterey, California.

DR. HIERS SPEAKS AT HARRIS HOSPITAL

Dr. Connie L. Hiers of Jonesboro was in Newport recently speaking to members of the community about plastic surgery.

DR. BRUCE LEIPZIG TO SPEAK AT INTERNATIONAL MEETING

Dr. Bruce Leipzig, a North Little Rock otolaryngologist, spoke before the 82nd International Congress of Otolaryngology and Head and Neck Surgery in Paris, France. Dr. Leipzig delivered the keynote address and also moderated an international panel during the two-day event.

DR. McFARLAND SPEAKS

Dr. Louis McFarland of Hot Springs spoke to the Garland County Diabetes Association. He spoke on insulin dependent diabetes.

DR. BLANKENSHIP APPOINTED TO COMMITTEE

Dr. Michael Blankenship of Texarkana has been appointed to a national committee for the Advancement of Medical Instrumentation. He was appointed to the Renal Disease and Detoxification Subcommittee which is involved in setting national and international rules and guidelines for medical equipment and care for patients with kidney disease.

DR. SCOTT VISITS CLASSES

Dr. John Scott of Batesville recently visited several kindergarten classes as part of a community helper unit. Dr. Scott familiarized students with various medical instruments they will be checked with during a routine visit to their doctor.

DR. MORRIS ELECTED

The American College of Physicians has elected Dr. Woodbridge E. Morris of Little Rock, to the 61,000 member national society.

PHYSICIANS CERTIFIED

Dr. Garnett Leonard of North Little Rock, Dr. Kevin Bay of Sherwood, and Dr. James C. Bethel of Benton have been recertified as Diplomates of the American Board of Family Practice.

AMS SPEAKERS BUREAU A SUCCESS

The Arkansas Medical Society's Speakers Bureau has provided a number of speakers to local groups even though it has been in operation less than one year. Public response from the program has been overwhelming. The physicians that have donated their time and effort over the past few months, where they spoke, and their topics are:

Paragould

Dr. Larry Lawson, Paragould Chapter, American Association of Retired Persons, "Cancer".

Dr. Roger Cagle, Paragould Chapter, American Association of Retired Persons, "Arthritis".

Hot Springs

Dr. Fred Heineman, Hot Springs Chapter, American Association of Retired Persons, "Cardiovascular Diseases".

Little Rock

Dr. Bill Tranum, Oak Forrest Lions Club, "Cancer".

Dr. Richard Martin, Vantage Convalescent Center, "Cardiovascular Diseases".

Dr. Amail Chudy, Oak Forrest Lions Club, "Socialized Medicine and Malpractice".

Dr. Stephen Holt, Oak Forrest Lions Club, "Arthritis".

Dr. Carlos Araoz, Vantage Convalescent Center, "Aging", and Pleasant Hills Total Living Community, "Parkinson's Disease".

Dr. Stephen Tucker, Deaf Access (a group of deaf senior citizens) and Westover Hills Presbyterian Church, "Wellness".

Dr. Dougas Horan, Vantage Convalescent Center, "Effects of Chronic Sun Exposure in the Elderly".

Dr. Ronald Hughes, Pleasant Hills Total Living Community, "High Blood Pressure".

The Speakers Bureau wishes to thank these physicians for their time and efforts.



Ark-Pac board members who attended conference in Washington, D. C. From left to right: Dr. Daniel Davidson, Searcy; Dr. Charles Rodgers, Little Rock; Dr. John Hestir, DeWitt; Mrs. R. E. Lopez, Newport; Dr. Roger Cagle, Paragould; and Dr. John Giller, El Dorado.

ARKANSAS MEDICAL SOCIETY POLITICAL ACTION COMMITTEE BOARD MEMBERS ATTEND CONFERENCE IN WASHINGTON

A group of physicians interested in the political future of our state, and members of ARK-PAC, attended the Political Action Education Conference in Washington, D. C., last September.

The state delegation met with Senator Dale Bumpers and Representative Tommy Robinson to discuss issues concerning the future of medicine. There was great concern about the DPT vaccine. Due to litigations, the cost of the vaccine is very high. The immunization program will suffer because the parents cannot afford the cost, and also because the pharmaceutical companies may not continue to manufacture the vaccine.

Other issues discussed were the Medicare freeze and possible legislation for the malpractice crisis.

At the sessions, the discussions focused on what the future may hold for physicians in political

action—local, state and federal levels—and the AMA plans for action.

It is clear that involvement of the physicians and spouses is extremely important and needed in order to survive all that is happening in medicine. We must start at the county level. Make sure you know your senators and representatives because they are shaping our legislative future. Let them know your views on the issues related to medicine, and how they are affecting the practice of medicine in their community. From the county level move to the state level. We have a group of dedicated people working to keep you informed of the latest news in legislation. In order to be effective, you cannot stop half-way. Once you are informed, get in touch with the senators and representatives. Your letters and phone calls are needed as well as your monetary contributions when you pay annual dues to ARK-PAC and AMPAC. If the government is practicing medicine, it is time for us to make our voices loud and clear. We need to campaign for pro-medicine candidates and not be shy about campaigning against those who have not been friendly to us regarding organized-medicine issues.

The 1986 Congressional elections are more than a year in the future, but AMPAC already is geared up for maximum participation. The most publicized activity is contributing money to individuals during campaigns. Because monetary donations are limited by law, AMPAC will provide non-monetary forms for assistance such as benchmark surveys, radio and TV spots, direct mail pieces and absentee ballot mailings at no cost to the candidates.

During the two days spent in Washington, our delegation became more aware than ever about the importance of political involvement. We need to continue this involvement or others will decide the future of medicine for us. —*Mrs. R. E. Lopez*



NEW MEMBERS

DR. CONNIE LOUISE HIERS

Dr. Hiers is a new member of the Craighead-Poinsett County Medical Society. She was born in Lubbock, Texas.

Dr. Hiers received her Bachelor of Science degree from Texas Tech University in 1976 and, in 1979, graduated from the University of Texas Medical School. She completed her internship and part of her residency at the University of Hawaii and East Tennessee State University, and finished her training at the University of Tennessee at Chattanooga.

Dr. Hiers began her practice of plastic surgery in Jonesboro in July. Her office is located at 816B Rains.

DR. JOHN "JACK" D. ALSTON

Dr. Alston, a native of Humboldt, Tennessee, is a new member of the Washington County Medical Society.

Dr. Alston received his Bachelor of Science degree in 1976 from Harding University. He is a 1980 graduate of the University of Arkansas College of Medicine. Dr. Alston completed his internship and residency at the University of Arkansas Medical Center.

Dr. Alston is affiliated with the Northwest Arkansas Surgical Clinic where he practices general surgery. His office address is 504 West Emma, Springdale.

DR. LUTHER R. WALLEY

Dr. Walley has joined the Garland County Medical Society. He was born in Jackson, Mississippi.

Dr. Walley graduated from Mississippi College in 1969 and is a 1973 graduate of the University of Mississippi School of Medicine. His internship was at the David Grant U. S. Air Force Medical Center. He did his general surgery residency at the Medical College of Georgia and completed his residency in plastic surgery at the Wilford Hall U. S. Air Force Medical Center, Lackland Air Force Base, Texas. He is board certified by the American Board of Plastic Surgery.

Dr. Walley's office for the practice of plastic surgery is at 200 Whittington in Hot Springs.

DR. MARSHA TAYLOR

Dr. Taylor has recently joined the Cleburne County Medical Society. She was born in Baxter Springs, Kansas.

Dr. Taylor is a graduate of the University of Missouri. She received her medical degree from the University of Missouri School of Medicine in 1982. Her training in family practice was at the University of Arkansas College of Medicine in Little Rock from 1982 to 1985.

Dr. Taylor is in family practice at the Greers Ferry Family Clinic.

DR. JAMES B. CRUCETTI

Dr. Crucetti is a new member of the Faulkner County Medical Society. He was born in Albany, New York.

Dr. Crucetti is a 1978 graduate of the University of Maryland and received his medical degree in 1984 from the George Washington University School of Medicine. He completed his internship at York Hospital in York, Pennsylvania.

Dr. Crucetti is in general practice at the Vilonia Family Medical Clinic.

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The Pulaski County Medical Society has added two new members to its roll:

DR. LINDA BLACK EYRE

Dr. Eyre was born in Ringgold, Louisiana. She is a 1976 graduate of Louisiana State University and completed her medical degree at Louisiana State University School of Medicine in 1980.

Dr. Eyre's postgraduate medical education in pediatrics was at the University of Mississippi for Medical Sciences and the University of Arkansas Medical Center. Most recently she trained at the University of Arkansas Medical Center in anesthesiology.

Dr. Eyre practices pediatrics at 500 South University in Little Rock.

DR. REBECCA JANE EDGE

Dr. Edge is a native of Little Rock, Arkansas.

She completed her undergraduate education at Oklahoma Baptist University and North Texas State University. She is a 1980 graduate of the University of Arkansas College of Medicine and completed her residencies in internal medicine and infectious disease at the same institution.

Dr. Edge is certified by the American Board of Internal Medicine. Her practice is at 2011 Fendley Drive, North Little Rock.

* * * *

The Union County Medical Society has added two new members to its roll:

DR. KENDEL L. KLEIN

Dr. Klein is a native of Great Bend, Kansas. Dr. Klein received his Bachelor of Arts degree from Wichita State University in 1978 and completed his medical degree at the University of Kansas School of Medicine in 1982. He completed his postgraduate education at St. Francis Regional Medical Center Family Practice Center in Wichita, Kansas, and is a member of the American Academy of Family Physicians.

Dr. Klein's office address is 253 South Concord, in Strong.

DR. CRAIG TEMPEY

Dr. Tempey is a native of Indianapolis, Indiana. He is a 1967 graduate of the University of California at Santa Barbara and in 1977, he received his medical degree from the University of Texas Medical School, San Antonio. Dr. Tempey received his internship and residency training in internal medicine at the Kaiser Foundation Hospital in San Francisco. He completed his residency training in radiology at Louisiana State University Medical Center in Shreveport in 1985. He is a member of the American College of Radiology.

Dr. Tempey practices radiology at 403 West Oak, Suite 100, El Dorado.

DR. RONALD E. REVARD

Dr. Revard is a new member of the Benton County Medical Society. He was born in Oklahoma City, Oklahoma.

Dr. Revard received his Bachelor of Arts degree from the University of Arkansas in 1974 and is a 1982 graduate of the University of Arkansas College of Medicine. His postgraduate training in internal medicine was at University Hospital in Little Rock. Dr. Revard is an associate member of the American College of Physicians and practices internal medicine at 906 Northwest 8th Street in Bentonville.

RESIDENT MEMBERS

DR. TOMMY R. CROSBY

Dr. Crosby is a 1984 graduate of the University of Oklahoma College of Medicine. He is a family practice resident at the Area Health Education Center in Fayetteville. Dr. Crosby has recently joined the Washington County Medical Society.

RESOLUTIONS



DR. ALBERT REEVES CLOWNEY

WHEREAS, the membership of the Union County Medical Society notes with profound sorrow the passing of their esteemed colleague, Albert Reeves Clowney, M.D., and

WHEREAS, he was a valued member of the Society since 1947 and was known for his compassion and understanding to his patients and to his friends, and

WHEREAS, he practiced for thirty-eight years for the benefit of the citizens of Union County.

BE IT THEREFORE RESOLVED:

THAT, we adopt this resolution and designate that it be a part of the permanent archives of the Society, and

THAT, a copy be forwarded to Dr. Clowney's family in order to express our profound loss, and

THAT, a copy be made available to the Journal of the Arkansas Medical Society for publication.

ADOPTED: Union County Medical Society

DR. JOHN WILLIAM HARPER

WHEREAS, the membership of the Union County Medical Society is deeply saddened by the recent death of a valued colleague, John William Harper, M.D., and

WHEREAS, he had been a valued member of the Medical Society since 1935, and

WHEREAS, Dr. Harper devoted his entire professional and personal life to the betterment of the health of his patients for fifty years.

BE IT THEREFORE RESOLVED:

THAT, we adopt this resolution and designate that it be a part of the permanent archives of the Society, and

THAT, a copy be forwarded to Dr. Harper's family in order to express our profound loss, and

THAT, a copy be made available to the Journal of the Arkansas Medical Society for publication.

ADOPTED: Union County Medical Society

ARKANSAS MEDICAL SOCIETY
MEMBERSHIP ROSTER
December 1, 1985

HEADQUARTERS OFFICE

214 NORTH 12TH STREET
POST OFFICE BOX 1208
FORT SMITH, ARKANSAS 72902

TELEPHONE: (501) 782-8218

MEMBERSHIP ROSTER OF THE ARKANSAS MEDICAL SOCIETY 1985

Type of Practice	Member's Name	Address	Telephone Number
		ARKANSAS COUNTY	
FP	Burleson, Stan W	Post Office Box 369, DeWitt 72042	946-1326
FP	Daniel, Noble B , III	Route 1, Box 21-D, Stuttgart 72160	673-7211
GP	Gordon, Thomas B	Post Office Box 509, DeWitt 72042	946-4646
FP	Guyer, G L	Route 1, Box 21-D, Stuttgart 72160	673-7211
FP	Hestir, John M	Post Office Drawer 512, DeWitt 72042	946-3637
RD	John, Milton C., Jr	903 South Grand Avenue, Stuttgart 72160 (Res.)	673-6623
GP	McCracken, Elbert A	Route 1, Box 209, Royal 71968 (Res.)	767-6112
GS	Millar, Paul H , Jr	Route 1, Box 21-D, Stuttgart 72160	673-7211
FP	Morgan, Jerry D	Route 1, Box 21-D, Stuttgart 72160	673-7211
FP	Northcutt, Carl E	Route 1, Box 21-D, Stuttgart 72160	673-7211
FP	Pritchard, Jack L	1022 South Main, Stuttgart 72160	673-2331
GP	Rasco, C. W , Jr	111 South Jackson, DeWitt 72042	946-3156
FP	Speer, Hoy B , Jr	1708 North Buerkle, Stuttgart 72160	673-2586
R	Speer, Marolyn N	1708 North Buerkle, Stuttgart 72160	673-4776
GS	Wellborn, James C., Jr.	Route 1, Box 21-D, Stuttgart 72160	673-7211
OBG	Wood, Gary P	Route 1, Box 21-D, Stuttgart 72160	673-7211
FP	Yelvington, Dennis B.	Route 1, Box 21-D, Stuttgart 72160	673-7211
		ASHLEY COUNTY	
EM	Burt, Frederick N	808 Cedar, Crossett 71635 (Res)	364-6814
GP	Cothern, William R	Post Office Box 577, Crossett 71635	364-6111
GP	Edwards, Lawrence E	100 Richbourg, Shalimar, Florida 32579	904-651-1921
GP	Garcia Luis F	Post Office Box 792, Crossett 71635	364-4181
FP	Gresham, Edward A	310 North Alabama, Crossett 71635	364-9111
IM	Karrot, Abraham	210 East Lincoln, Hamburg 71646	853-9828
FP	Ripley, Curtis E	317 North Alabama, Crossett 71635	364-5113
GP	Salb, R L.	113 Pine, Crossett 71635	364-2138
FP	Thompson, Barry V	Post Office Box 675, Crossett 71635	364-5746
FP	Toon, D L	Post Office Box 595, Crossett 71635	364-8062
FP	Walsh, Benjamin J	Post Office Box 904, Crossett 71635	364-9111
		BAXTER COUNTY	
GYN	Baker, Robert L.	#10 Medical Plaza, Mountain Home 72653	425-2552
GP	Beard, Arthur L.	126 West 6th, Mountain Home 72653	425-3131
GP	Burnett, Richard L	Post Office Box 301, Mountain Home 72653	425-3030
IM	Cheney, Maxwell G	Post Office Box 725, Mountain Home 72653	425-3125
NEP	Chock, Daniel P	Post Office Box 786, Mountain Home 72653	425-5535
PD	Chock, Helga E	Post Office Box 786, Mountain Home 72653	425-5535
AN	Clarke, James S.	449 West North, Mountain Home 72653	425-9484
PD	Condrey, Yoland M	400 South College, Suite 3, Mountain Home 72653	425-6272
RD	DeLany, Clarence L.	Post Office Box 198, West Plains, Missouri 65775	
FP	Dunbar, James C	Post Office Box 410, Mountain Home 72653	425-2020
PTH	Dykstra, Peter C.	Route 6, Box 372, Mountain Home 72653 (Res)	425-9181
R	Fontenot, Edwin, Jr.	Bull Shoals Hospital, Bull Shoals 72619	445-4292
GS	Ford, William H	Post Office Box 433, Mountain Home 72653	425-9120
GP	Gotaas, Bernice E.	Post Office Box 44, Bull Shoals 72619	445-4755
RD	Guenthner, John F.	415 Glenstone, Mountain Home 72653 (Res)	425-8824
D	Hardin, Philip R	Post Office Box 142, Mountain Home 72653	425-9737
	Hawkins, Michael L	Birmingham, Alabama	
CD	Johnson, Stacey M.	#17 Medical Plaza, Mountain Home 72653	425-6212
GP	Kelley, Lawrence A	Post Office Box 299, Bull Shoals 72619	445-4292
FP	Kerr, Robert L	Post Office Box 706, Mountain Home 72653	425-6971
ORS	Knox, Thomas E	#19 Medical Plaza, Mountain Home 72653	425-9293
GE	MacKercher, Peter A	Post Office Box 329, Mountain Home 72653	425-4404
OPH	Massey, James Y	Post Office Box H, Mountain Home 72653	425-6026
OPH	McGaughey, Allen S.	795 Village Mall, Mountain Home 72653	425-2277
A	Peden, Robert G	#3 Medical Plaza, Mountain Home 72653	425-4595
PTH	Peterson, Hubert C.	Route 5, Box 168, Mountain Home 72653	741-6141
OBG	Plant, Richard F.	503 Hospital Drive, Mountain Home 72653	425-7788
R	Roberts, David H	Seventh and Shiras, Mountain Home 72653	425-6322
OPH	Sneed, John W , Jr	Post Office Drawer H, Mountain Home 72653	425-6026
GS	Stahl, Ray E , Jr	Post Office Box 433, Mountain Home 72653	425-9120
ORS	Sward, David T	#19 Medical Plaza, Mountain Home 72653	425-9293
R	Tullis, Joe M.	Post Office Box 889, Mountain Home 72653	425-6322
U	Webb, E. Russell	#10 Medical Plaza, Mountain Home 72653	425-9373
GP	Wilbur, Paul F	Post Office Box 706, Mountain Home 72653	425-6971
FP	Wilson, Jack C	Post Office Box 725, Mountain Home 72653	425-3125
		BENTON COUNTY	
OBG	Addington, Alfred R	1116 Poplar Place, Rogers 72756	636-5939
AN	Adrian, James A	Post Office Box 1599, Rogers 72757	636-3840
PD	Allen, L. Barry	1114 Poplar Place, Rogers 72756	636-9234
FP	Arkins, James H	Post Office Box 669, Bentonville 72712	273-9056
IM	Atkinson, Thomas W	Post Office Box 1206, Siloam Springs 72761	524-4141
P	Ball, Eugene H	Route 2, Box 53, Rogers 72756	636-8307
FP	Benjamin, George H	304 South Maxwell, Siloam Springs 72761	524-3141
GS	Bledsoe, James H	#6 Halsted Circle, Rogers 72756	636-5411
OPH	Boozman, Fay W , III	Post Office Box 1353, Rogers 72757	636-7506
D	Carter, Vernon H	1301 West Persimmon, Rogers 72756	636-0599
AN	Christman, Daniel E	Post Office Box 1599, Rogers 72757	636-3840
EM	Claytor, Tonya C	St. Mary's Hospital, Emer. Dept., Rogers 72756	636-0200, Ext. 749
FP	Clemens, R Dale	304 South Maxwell, Siloam Springs 72761	524-3141
FP	Clower, John D	Post Office Box 737, Rogers 72757	636-2711
FP	Cohagan, Donald L	408 North Walton, Bentonville 72712	273-5543
OPH	Cole, Randall E	Post Office Box 1353, Rogers 72757	636-7506
RD	Compton, Neil E.	Post Office Box 209, Bentonville 72712 (Res)	273-5123
GS	Costaldi, Mario E	#6 Halsted Circle, Rogers 72756	636-5411
RD	Dean, Lee A	Route 4, Box 154, Rogers 72756 (Res)	636-3694
PTH	Denman, David A	Rogers Memorial Hospital, Rogers 72756	636-0200
IM	Donnell, Robert W	Post Office Box 737, Rogers 72757	636-2711
R	Drange, R Kirk	1200 West Walnut, Rogers 72756	636-0200
GYN	Elkins, James P	1300 Walnut Centre, Suite G, Rogers 72756	636-0300
FP	Floyd, Louis C	Route 8, Box 100, Bentonville 72712	855-3711
FP	Garrett, David C , III	Post Office Box 737, Rogers 72757	636-2711
PD	Harmon, Harry M	1114 Poplar Place, Rogers 72756	636-9234
ORS	Henderson, Oscar L	101 North 37th, Rogers 72756	636-9607
FP	Hitt, Jerry L	Post Office Box 737, Rogers 72757	636-2711
OPH	Hof, C William	Post Office Box 1353, Rogers 72757	636-7506
OPH	Hoffman, Carl E.	#1 Halsted Circle, Rogers 72756	636-6020
FP	Holder, Robert E	Post Office Box 669, Bentonville 72712	273-9056
AN	Horner, Glennon A	Post Office Box 1599, Rogers 72757	636-3840
FP	Howard, K Lamar	Post Office Box 737, Rogers 72757	636-2711
FP	Howard, Willard H , Jr	Post Office Box 739, Bentonville 72712	273-5551
FP	Hull, Robert R	Post Office Box 737, Rogers 72757	636-2711
GP	Huskins, James D	304 South Maxwell, Siloam Springs 72761	524-3141

Type of Practice	Member's Name	Address	Telephone Number
FP	Huskins, John A	Post Office Box 737, Rogers 72757	636-2711
FP	Jacks, John W	408 North Walton, Bentonville 72712	273-5543
GS	Jennings, William E.	1040 West Walnut, Rogers 72756	636-2711
ORS	Kendrick, Carl M	101 North 37th, Rogers 72756	636-9607
R	Knapp, James R.	Rogers Memorial Hospital, Rogers 72756	636-0200
PD	Knight, Richard R	1114 Poplar Place, Rogers 72756	636-9234
FP	Martin, Albert E., Jr	910 Northwest Seventh, Bentonville 72712	273-9400
FP	McCollum, Edward N	Post Office Box 127, Decatur 72722	752-3233
GE	McKnight, William D.	Post Office Box 1567, Rogers 72757	636-3627
IM	Miles, Richard W	Post Office Box 1000, Rogers 72757	636-6551
FP	Moose, John I.	304 South Maxwell, Siloam Springs 72761	524-3141
FP	Mullins, Neil D	Post Office Box 869, Bentonville 72712	273-9400
FP	Neaville, Gary A	Post Office Box 737, Rogers 72757	636-2711
ONC	Panettiere, Frank J.	#6 Halsted Circle, Rogers 72756	636-5411
P	Patterson, Charles W	Post Office Box 1565, Fayetteville 72702	442-7662
GS	Pearson, Richard N	#6 Halsted Circle, Rogers 72756	636-5411
RD	Pickens, James L.	2704 Patti Lane, Rogers 72756 (Res.)	636-2862
R	Platt, Michael R.	Post Office Box 86, Gravette 72736	787-5291, Ext 196
GP	Puckett, Billy J	304 South Maxwell, Siloam Springs 72761	524-3141
OTO	Reese, Michael C.	1110 West Elm, Rogers 72756	636-0110
IM	Revard, Ronald E.	906 Northwest 8th, Bentonville 72712	273-9000
RD	Robbins, Robert H	201 Golfview Drive, Franklin, North Carolina 28734	704-369-9381
FP	Rollow, John A	408 North Walton, Bentonville 72712	273-2497
IM	Rolniak, Wallace A.	Post Office Box 1000, Rogers 72757	636-6551
GP	Ronald, Douglas C.	Route 8, Box 100, Bentonville 72712	855-3711
FP	Steadman, Hunter M., Jr	#9 Professional Drive, Bella Vista 72714	855-9081
FP	Stinnett, Charles H.	304 South Maxwell, Siloam Springs 72761	524-3141
FP	Stone, W Tex	1219 West Walnut, Rogers 72756	636-6881
R	Swaim, Terry J.	St Mary's Hospital, Rogers 72756	636-0200, Ext 764
IM	Swindell, William G	Post Office Box 1000, Rogers 72757	636-6551
U	Turley, Jan T.	#2 Halsted Circle, Rogers 72756	636-9669
IM	Waldon, Gene B.	Post Office Box 1000, Rogers 72757	636-6551
GP	Warren, Grier D.	Post Office Box 737, Rogers 72757	636-2711
FP	Weaver, Donald D	910 Northwest 7th, Bentonville 72712	273-9400
FP	Weaver, Robert H.	Post Office Box 9, Gentry 72734	736-2213
IM	Wright, Larry D	Post Office Box 1000, Rogers 72757	636-6551

BOONE COUNTY

GS	Bell, Thomas E.	Post Office Box 1116, Harrison 72602	741-6418
R	Bennett, Joe D	Post Office Box 969, Harrison 72602	741-9667
OTO	Chambers, Carlton L., III	Bower at Pine, Harrison 72601	741-7684
FP	Daniel, Charles D	Post Office Box E, Marshall 72650	448-3327
U	Ferguson, Noel F	707 North Vine, Harrison 72601	741-9481
FP	Fowler, Ross E.	215 West Stephenson, Harrison 72601	741-8651
IM	Garland, William J., Jr	Post Office Box 1077, Harrison 72602	741-3459
OPH	Geyler, Alice Laule	715 West Sherman, Harrison 72601	741-1910
GS	Gladden, Jean C.	Post Office Box 1118, Harrison 72602	741-8275
GS	Hoberock, Thomas R.	825 North Spring, Harrison 72601	741-7411
RD	Hudson, William A.	Hudsonakers, Jasper 72641 (Res.)	446-2948
GP	Kirby, Henry V	825 North Spring, Harrison 72601	741-5022
FP	Langston, Robert H	520 North Spring, Harrison 72601	741-8286
ORS	Ledbetter, Charles A	224 West Erie, Harrison 72601	741-8289
GYN	Mahoney, Paul L., Jr	Post Office Box 1174, Harrison 72602	741-7334
FP	Maris, Mahlon O.	Post Office Box 1597, Harrison 72602	741-8247
FP	McCoy, Orville B	707 North Vine, Harrison 72601	741-3592
R	Rozeboom, Victor A	Post Office Box 1134, Harrison 72602	741-1166
GP	Scroggins, Sam J	1002 North Spring, Harrison 72601	741-6373
OBG	Simpson, Thomas J	702 North Spring, Harrison 72601	741-2441
IM	Smith, H Van	Post Office Box 1077, Harrison 72602	741-3459
P	Soltys, M. Karen	715 West Sherman, Harrison 72601	741-8216
ORS	Vowell, Don R	224 West Erie, Harrison 72601	741-8289
GS	Williams, Rhys A	Post Office Box 1118, Harrison 72602	741-8275
FP	Wilson, Joe B	520 North Spring, Harrison 72601	741-8286

BRADLEY COUNTY

GP	Chambers, F. David	219 East Central, Warren 71671	226-5873
FP	Marsh, James W	302 North Main, Warren 71671	226-2112
FP	Merkel, Fred A	Post Office Box 248, Hermitage 71647	463-2251
FP	Pennington, Kerry F	Post Office Box 948, Warren 71671	226-6754
FP	Whaley, W C., Jr	205 East Church, Warren 71671	226-5811
FP	Wynne, George F	113 West Cypress, Warren 71671	226-2844

CARROLL COUNTY

GS	Bubak, Paul J	Post Office Box 422, Berryville 72616	423-6641
FP	Card, Shannon R	207 Carter, Berryville 72616	423-6661
R	Diacon, W Lindley	Post Office Box 400, Rogers 72756	636-0012
RD	Etherington, Robert A.	Post Office Box 351, Eureka Springs 72632 (Res.)	253-6716
FP	Finfrock, William E.	41 Kingshighway, Eureka Springs 72632	253-9746
GS	Flake, William K	207 Carter, Berryville 72616	423-6661
GP	Green, Jess D., Jr	Post Office Box 288, Eureka Springs 72632	253-6766
FP	Stensby, Harold F	207 Carter, Berryville 72616	423-6663
FP	Wallace, Oliver	Post Office Drawer AA, Green Forest 72638	438-5218

CHICOT COUNTY

GP	Berry, Danny T	Post Office Box 788, Lake Village 71653	265-5343
GS	Burge, John P.	Post Office Box 788, Lake Village 71653	265-5343
GP	Heder, Guy W	Post Office Box 88, Portland 71663	737-2221
GP	Russell, John R	Lake Village Clinic, Lake Village 71653	265-5343
IM	Sinlar, P	2420 North Highway 65, Eudora 71640	355-4496
GP	Smith, Major E.	Post Office Box 310, Dermott 71638	538-5717
#	Talbot, Allen G	Lake Village	
GP	Thomas, H W	Post Office Box 250, Dermott 71638	538-5255
R	Tuangsithtanon, T	Post Office Box 208, Lake Village 71653	265-5351
GP	Tvedten, Tom	Post Office Box 512A, Lake Village 71653	265-3413
GP	Vichugsananon, Niponth	Post Office Box 385, Lake Village 71653	265-5374
GP	Weaver, William J.	Post Office Box O, Eudora 71640	355-4376
GP	Wilson, Thomas C	Post Office Box J, Dermott 71638	538-5253

CLARK COUNTY

RD	Anderson, P. R.	Post Office Box 758, Arkadelphia 71923 (Res.)	246-4464
GP	Balay, John W	416 Main, Arkadelphia 71923	246-2431
GP	Blackmon, James T	1008 Pine, Arkadelphia 71923	246-6734
RD	Clark, Charles G	1108 Huddleston, Arkadelphia 71923 (Res.)	246-4493
IM	Dorman, Robert A	2850 Twin Rivers Drive, Arkadelphia 71923	246-6766
RD	Kennedy, J W	106 Evonshire, Arkadelphia 71923 (Res.)	246-8105

Type of Practice	Member's Name	Address	Telephone Number
P	Parsons, V Earl, Jr	117 North 11th, Arkadelphia 71923	246-8364
	Ritter, N. R.	Deming, New Mexico	
GP	Rozzell, Allen R	107 North Third, Gurdon 71743	353-4353
GP	Taylor, George D.	137 North Sixth, Arkadelphia 71923	246-8022
RD	Toombs, Vernon L	101 Charlotte, Gurdon 71743 (Res)	353-2935
FP	Weber, Patrick L.	201 North 26th, Arkadelphia 71923	246-9831

CLEBURNE COUNTY

GP	Ashabranner, Wesley J.	Post Office Box 1111, Heber Springs 72543	362-2414
OPH	Baldridge, Max	Post Office Box 431, Heber Springs 72543	362-3479
RD	Barnett, James C	1828 West Front, Heber Springs 72543 (Res)	362-2786
GP	Barnett, Michael E	4th and Spring, Heber Springs 72543	362-3143
OPH	Beasley, Harold	Post Office Box 272, Heber Springs 72543	362-3479
GS	Campos, Amador C.	821 West Main, Heber Springs 72543	362-7037
GP	Eans, Thomas L.	1709 West Main, Heber Springs 72543	362-8256
FP	Hinkle, Richard A	Post Office Box 279, Quitman 72131	589-2600
EM	Oakley, Nita B	4301 West Markham, Slot 584, Little Rock 72201	661-6333
GP	Poff, Joseph H	Post Office Box 1111, Heber Springs 72543	362-2414
FP	Poff, Nathan L.	Post Office Box 1111, Heber Springs 72543	362-2414
#	Scruggs, Joe B , Jr	Heber Springs	
IM	Sharp, Jack V	Post Office Box 70, Heber Springs 72543	362-3316
FP	Taylor, Marsha	Post Office Box 268, Greers Ferry 72067	NF

COLUMBIA COUNTY

FP	Alexander, John E.	707 North Washington, Magnolia 71753	234-2288
FP	Alexander, John E., Jr.	707 North Washington, Magnolia 71753	234-2288
PD	Baldwin, Ronald L.	1411 North Jackson, Magnolia 71753	234-7912
FP	Farmer, John M.	104 East Columbia, Magnolia 71753	234-2230
FP	Griffin, Rodney L.	123 North Jackson, Magnolia 71753	234-3040
R	Hunter, Robert W., Jr	2602 Crestview, Magnolia 71753 (Res)	234-6117
FP	Kelley, Charles W	1327 North Washington, Magnolia 71753	234-5544
GS	McMahen, H Scott	Post Office Box 647, Magnolia 71753	234-3340
FP	Pullig, Thomas A	805 North Jackson, Magnolia 71753	234-8570
FP	Roberts, Franklin D	110 West North, Magnolia 71753	234-8430
GP	Ruff, John L.	104 Hospital Road, Magnolia 71753	234-2144
GP	Strange, Vance M.	Post Office Box 67, Stamps 71860	533-2438
GP	Walker, Jack T	123 North Jackson, Magnolia 71753	234-3040
FP	Weber, Charles H	110 West North, Magnolia 71753	234-4411

CONWAY COUNTY

GP	Hall, Anthony D.	601 South Moose, Morrilton 72110	354-4505
GP	Hickey, Thomas H.	Post Office Box 230, Morrilton 72110	354-4623
GP	Hyatt, Benjamin C.	Post Office Box 265, Perryville 72126	889-5141
	Kordek, Michael E.	Ebensburg, Pennsylvania	
GP	Lipsmeyer, Keith M.	Post Office Box 677, Morrilton 72110	354-2456
RD	Owens, Gastor B.	Route 3, Box 2, Morrilton 72110 (Res.)	354-2616
FP	Wells, Charles F.	601 South Moose, Morrilton 72110	354-2123

CRAIGHEAD-POINSETT COUNTY

D	Alston, Herman D	114 East Oak, Jonesboro 72401	932-4570
R	Aston, J. Kenneth	Post Office Box 1086, Jonesboro 72403	972-7260
NS	Atkinson, Robert C.	520 Carson, Jonesboro 72401	932-3758
END	Baldridge, John A.	416 East Washington, Jonesboro 72401	932-4683
ORS	Ball, John F.	801-B Osler Drive, Jonesboro 72401	935-0519
GYN	Basinger, James W	Post Office Box 3075, Jonesboro 72402	972-5555
OBG	Berry, Donald M.	Post Office Box 1478, Jonesboro 72403	935-3990
FP	Blanchard, Steven M.	410 East Jackson, Jonesboro 72401	933-0445
P	Blaylock, Jerry D.	901 South Church, Jonesboro 72401	935-0360
R	Bodeker, Larry J	Post Office Box 1030, Jonesboro 72403	932-0639
U	Bogaev, Leonard R	Post Office Box 1513, Jonesboro 72403	932-2926
FP	Bradley, James F., Jr.	3100 Apache Drive, Jonesboro 72401	932-0002
FP	Brown, Mark C.	305 West Main, Trumann 72472	483-6131
R	Buckner, John H	Post Office Box 1030, Jonesboro 72403	972-4196
IM	Burns, Richard G.	505 East Matthews, Jonesboro 72401	932-1198
IM	Clopton, Owen H., Jr.	505 East Matthews, Jonesboro 72401	932-1198
HEM	Cohen, Robert S	Post Office Box 865, Jonesboro 72403	932-7379
FP	Crawley, Michael E.	3100 Apache Drive, Jonesboro 72401	972-1720
ORS	Dickson, Glenn E.	505 East Matthews, Jonesboro 72401	932-1820
CD	Duplantis, Allen J., Jr	303 East Matthews, Suite 100, Jonesboro 72401	935-9608
**D	Duplantis, Kathryn	Route 6, Box 359, Jonesboro 72401 (Res.)	901-528-5795
OTO	Eddington, William R	505 East Matthews, Jonesboro 72401	935-8132
#	Faris, John C	Jonesboro	
FP	Forestiere, A J	Post Office Box 106, Harrisburg 72432	578-5443
R	Garner, William L.	Post Office Box 1030, Jonesboro 72403	932-0639
OPH	George, F Joseph	416 East Washington, Suite B, Jonesboro 72401	932-0485
FP	Golden, Stephen C.	924 South Main, Jonesboro 72401	935-5529
OTO	Gossett, Clarence E.	505 East Matthews, Jonesboro 72401	935-8132
N	Goza, Gary R	303 East Matthews, Jonesboro 72401	935-1134
ONC	Gray, David P	311 East Matthews, Jonesboro 72401	935-4150
R	Green, W Robert	Post Office Box 1030, Jonesboro 72403	932-0526
IM	Guinn, Donald R	505 East Matthews, Jonesboro 72401	932-1198
P	Guthrie, Alastair N	2701 South Caraway Road, Jonesboro 72401	932-0692
IM	Hall, Ray H , Jr	311 East Matthews, Jonesboro 72401	935-4150
RD	Harper, Thomas P	901 West Hearn, Blytheville 72315 (Res)	763-0032
PS	Hiers, Connie L.	816-B Rains, Jonesboro 72401	935-0861
GE	Hightower, Michael D.	311 East Matthews, Jonesboro 72401	935-4150
CD	Hill, Roger D.	311 East Matthews, Jonesboro 72401	935-4150
FP	Hogue, Ernest L.	920 Union, Jonesboro 72401	932-3022
P	James, Frank M.	Post Office Box 1-366, Fort Supply, Oklahoma 73841	405-766-2311
PTH	Jennings, R. Duke	411 East Matthews, Jonesboro 72401	932-7430
AN	Johnson, Larry H	806 South Church, Jonesboro 72401	932-4211
PD	Johnson, Roehl W	505 East Matthews, Jonesboro 72401	935-6012
GS	Jones, K Bruce	826 South Main, Jonesboro 72401	932-4875
	Jones, R J	PSC 1, Box 20128, APO, San Francisco, California 96230	
GE	Jordan, Harry J	311 East Matthews, Jonesboro 72401	935-4150
GS	Keisker, Henry W , Jr	505 East Matthews, Jonesboro 72401	932-4581
PD	Kemp, Charles E.	505 East Matthews, Jonesboro 72401	935-6012
PTH	Kroe, Donald J	411 East Matthews, Jonesboro 72401	932-7430
U	Lassonde, Robert G	416 East Washington, Jonesboro 72401	932-8674
FP	Lawrence, Robert O., Jr	417 East Matthews, Jonesboro 72401	972-0550
RD	Ledbetter, Joseph W	626 West Washington, Jonesboro 72401 (Res.)	932-4197
OBG	Lunde, Stephen P	Post Office Box 1478, Jonesboro 72403	935-3990
FP	Lyons, Lewis C.	924 South Main, Jonesboro 72401	972-8181
NEP	Mackey, Michael	311 East Matthews, Jonesboro 72401	935-4150
FP	Maglothin, Douglas L.	410 East Jackson, Jonesboro 72401	933-0560

Type of Practice	Member's Name	Address	Telephone Number
ORS	Mahon, Larry E.	910 South Main, Jonesboro 72401	935-9123
FP	McGrew, Gary L.	801 Osler Drive, Jonesboro 72401	932-2423
OPH	McKee, Bobby E	601 East Matthews, Jonesboro 72401	935-6396
RD	Mitchell, George E	2505 Wood, Jonesboro 72401 (Res.)	932-4226
GP	Modelevsky, Aaron C.	Post Office Box 1427, Jonesboro 72403	932-0980
EM	Neff, Michael D	224 East Matthews, Jonesboro 72401	972-4288
RD	Peeler, Malcolm O	2801 Greenbriar, Jonesboro 72401 (Res.)	935-5814
FP	Poole, Grover D	Post Office Box 10, Jonesboro 72403	932-2634
IM	Porter, Revel D.	505 East Matthews, Jonesboro 72401	932-1198
P	Price, Edwin F	Post Office Box 5033, Jonesboro 72402	972-0290
PD	Rainwater, W T	505 East Matthews, Jonesboro 72401	935-6012
EM	Raney, Bascom P	1415 Metzler Lane, Jonesboro 72401 (Res.)	935-8184
OBG	Reid, E. Paul	3100 Apache Drive, Jonesboro 72401	972-6740
FP	Robbins, Robert A	Post Office Box 8, Lake City 72437	237-4396
RHU	Roberts, Randy D	311 East Matthews, Jonesboro 72401	935-4150
FP	Robinette, James M.	801 Osler Drive, Jonesboro 72401	932-2423
D	Rogers, James F	406 East Washington, Jonesboro 72401	935-4755
CDS	Rubin, Harvey P	303 East Matthews, Jonesboro 72401	972-6677
GS	Rusher, Albert H., Jr	816-C Rains, Jonesboro 72401	935-1242
GS	Sanders, James W	826 South Main, Jonesboro 72401	932-4875
NS	Sapiro, Gary S	416-D East Washington, Jonesboro 72401	972-8032
ORS	Schrantz, James L	830 Cobb, Jonesboro 72401	972-8040
U	Scriber, Ladd J	Post Office Box 1513, Jonesboro 72403	932-2926
RD	Shanlever, R. C.	1103 Wilkins, Jonesboro 72401 (Res.)	932-2450
ORS	Shanlever, William T	906 South Main, Jonesboro 72401	972-1640
PD	Skaug, Warren A	505 East Matthews, Jonesboro 72401	935-6012
	Smith, B. Michael	Jesup, Georgia	
GP	Smith, Floyd A., Jr	415 West Main, Trumann 72472	483-6419
GP	Smith, Vestal B	Post Office Box 614, Marked Tree 72365	358-2811
AN	Sparks, E. Barrett	806 South Church, Jonesboro 72401	932-4211
OBG	St. Clair, John T., Jr	Post Office Box 1478, Jonesboro 72403	935-3990
OPH	Stainton, Joseph C.	416 East Washington, Suite B, Jonesboro 72401	932-0485
PTH	Stainton, Robert M., Jr	411 East Matthews, Jonesboro 72401	932-7430
FP	Stallings, Joe H., Jr	404 Creath, Jonesboro 72401	932-8121
FP	Swingle, Charles G.	Post Office Box 267, Marked Tree 72365	358-2036
FP	Taylor, G. Wayne	Post Office Box 160, Caraway 72419	482-3352
IM	Taylor, Robert D	311 East Matthews, Jonesboro 72401	935-4150
FP	Tedder, Michael E	3100 Apache Drive, Jonesboro 72401	972-1810
CDS	Teply, Joseph F.	303 East Matthews, #102, Jonesboro 72401	972-8030
FP	Thomas, J. Fred	514 Southwest Drive, Jonesboro 72401	935-8510
OPH	Utley, Phillip M	920 South Main, Jonesboro 72401	932-8221
FP	Verser, Joe	Post Office Box 106, Harrisburg 72432	578-5443
PTH	Vollman, Don B., Jr.	411 East Matthews, Jonesboro 72401	932-7430
OPH	Webb, James W	920 South Main, Jonesboro 72401	932-8221
CD	White, Anthony T	311 East Matthews, Jonesboro 72401	935-4150
GS	Wiggins, H. Lynn	816 Rains, Suite C, Jonesboro 72401	935-1242
U	Williams, E. Walden	Post Office Box 1513, Jonesboro 72403	932-2926
EM	Wilson, Francis M	Post Office Box 5078, Jonesboro 72403	972-4288
PTH	Wilson, Joe T., Jr.	411 East Matthews, Jonesboro 72401	932-7430
RD	Winters, W. Lee	(Address unknown)	
RD	Wisdom, G. Durwood	905 Valhalla Drive, Jonesboro 72401 (Res.)	935-5128
IM	Woodruff, Stephen O	311 East Matthews, Jonesboro 72401	935-4150
OBG	Yates, Robert L.	3100 Apache Drive, Suite A-1, Jonesboro 72401	972-8788
OTO	Young, William C., Jr	Post Office Box 7039, Jonesboro 72403	932-6799

CRAWFORD COUNTY

EM	Daily, Richard E	Crawford County Memorial Hospital, Van Buren 72956	474-3401
FP	Darden, Lester R.	Post Office Box 1327, Van Buren 72956	474-2336
GP	Edds, Millard C.	1103 Chestnut, Van Buren 72956	474-2361
IM	Edwards, Henry N	Post Office Box 608, Van Buren 72956	474-5061
FP	Gilmore, Owen B	1500 Dodson, Fort Smith 72901	782-2071
EM	Hefner, David P	Crawford County Memorial Hospital, Van Buren 72956	474-3401
GP	Sasser, L. Gordon, III	Post Office Box 438, Alma 72921	632-3855
RD	Shearer, F. E	Post Office Box 458, Alma 72921 (Res.)	632-3556
FP	Sills, D. Bart	Post Office Box 16, Mountainburg 72946	369-2091
FP	Travis, A. Lawrence	Post Office Box 1327, Van Buren 72956	474-2336

CRITTENDEN COUNTY

PTH	Adler, Justin C., Jr	200 Tyler, West Memphis 72301	735-1500, Ext. 193
GYN	Arnold, Sidney W	Rittwood, Box 598, Marked Tree 72365 (Res.)	358-3666
GP	Deneke, Milton D	Post Office Box 687, West Memphis 72301	735-1170
GYN	Ferguson, T. Murray	200 South Rhodes, West Memphis 72301	735-2150
OBG	Ford, Robert C., Jr	200 South Rhodes, West Memphis 72301	735-2150
OBG	Gray, Thomas L.	228 Tyler, Suite 204, West Memphis 72301	732-2531
FP	Hamilton, Ralph B	300 South Rhodes, West Memphis 72301	735-1170
NEP	Hernandez, Jacinto	136 Block, Marion 72364	739-4481
AN	Herrington, C. G. "Cap", Jr	Post Office Box 240896, Memphis, Tennessee 38124	901-685-6343
OTO	Hodges, John M.	300 Tyler, West Memphis 72301	735-7603
GS	Huffstutter, Paul J.	308 South Rhodes, West Memphis 72301	735-3664
RD	Jay, Gilbert D., III	Route 1, Box 285-A, Heber Springs 72543 (Res.)	728-4835
OPH	Kennedy, Keith B	316 Tyler, West Memphis 72301	735-7680
GS	Lanford, H. G	308 South Rhodes, West Memphis 72301	735-3664
ORS	L'Heureux, Guy J	228 Tyler, Suite 208, West Memphis 72301	732-3836
FP	Lubin, Milton	314 North Missouri Street, West Memphis 72301	735-3919
ORS	Meredith, Samuel G., Jr	228 Tyler, Suite 208, West Memphis 72301	732-3836
IM	Miller, James L.	300 South Rhodes, West Memphis 72301	735-1170
IM	Nadeau, Kenneth R	228 Tyler, West Memphis 72301	735-1973
IM	Peeples, Chester W., Jr	228 Tyler, Suite 100, West Memphis 72301	735-1973
OTO	Pettit, Paul N., Jr	228 Tyler, Suite 200, West Memphis 72301	732-3142
FP	Pierce, Trent P	228 Tyler, Suite 304, West Memphis 72301	735-0833
GS	Schoettle, G. P	308 South Rhodes, West Memphis 72301	735-3664
FP	Shrader, Floyd R	1201 North Missouri, West Memphis 72301	732-5555
GP	Smith, Bedford W	300 South Rhodes, West Memphis 72301	735-1170
IM	Taylor, C. Herbert, Jr	200 South Rhodes, West Memphis 72301	739-4458
R	Utley, L. Thomas	200 Tyler, West Memphis 72301	735-1500, Ext. 218
IM	Webb, Dan W	228 Tyler, West Memphis 72301	735-1973
OBG	Westbrook, H. Wade	228 Tyler, Suite 204, West Memphis 72301	732-2531
FP	Wright, William J	210 Shoppingway, Suite A, West Memphis 72301	735-8751

CROSS COUNTY

FP	Beaton, Kenneth E.	Post Office Box 158, Wynne 72396	238-2321
FP	Bethell, Robert D.	Post Office Box 158, Wynne 72396	238-2321
FP	Burks, Willard G	Post Office Box 158, Wynne 72396	238-2321
GP	Crain, Vance J	Post Office Box 158, Wynne 72396	238-2321
FP	Hayes, Robert A., Jr	Post Office Box 158, Wynne 72396	238-2321
FP	Jacobs, James R.	411 South Falls, Wynne 72396	238-3261
FP	Young, John H	411 South Falls, Wynne 72396	238-3261

Type of Practice	Member's Name	Address	Telephone Number
		DALLAS COUNTY	
FP	Davis, Paul W	Post Office Box 689, Fordyce 71742	352-8655
FP	Delamore, John H	Post Office Box 351, Fordyce 71742	352-7117
FP	Floyd, Mark A	Post Office Box 689, Fordyce 71742	352-8655
FP	Howard, Don G	110 North Clifton, Fordyce 71742	352-3151
FP	Nutt, Hugh A	110 North Clifton, Fordyce 71742	352-5144
		DESHA COUNTY	
GP	Go, Peter K H	Post Office Box 97, Dumas 71639	382-5252
GP	Harris, Howard R.	207 South Elm, Dumas 71639	382-4425
FP	Hoagland, Robert A	145 West Waterman, Dumas 71639	382-4878
FP	Prosser, Robert L., III	Post Office Box 707, McGehee 71654	222-6131
FP	Robinson, Guy U.	207 South Elm, Dumas 71639	382-4425
GP	Turney, Lonnie R.	101 South Third, McGehee 71654	222-4044
FP	Young, James E.	Post Office Box 707, McGehee 71654	222-6131
		DREW COUNTY	
GP	Binns, Van C.	203 East Trotter, Monticello 71655	367-3094
GP	Busby, Arlee K	733 Roberts Drive, Monticello 71655	367-3246
GP	Llana, Angelo T	433 South Main, Monticello 71655	367-5955
GP	Maxwell, Ralph M	766 H. L. Ross Drive, Monticello 71655	367-6293
RD	Price, Johnnie P.	232 South Main, Monticello 71655 (Res.)	367-5100
FP	Wallick, Paul A	906 Roberts Drive, Monticello 71655	367-6867
FP	Wilson, Harold F.	906 Roberts Drive, Monticello 71655	367-6867
		FAULKNER COUNTY	
RD	Archer, Charles A., Jr	411 Western Avenue, Conway 72032 (Res.)	329-3412
FP	Banister, Bob G	923 Parkway, Conway 72032	329-3824
AN	Beasley, Margaret D	Post Office Box 404, Conway 72032	329-3831
FP	Beasley, Thomas O	Post Office Box 1386, Conway 72032	329-2946
ADM	Benafield, Robert B	Post Office Box 2181, Little Rock 72203	378-2356
GP	Crucetti, James B.	Post Office Box 130, Vilonia 72173	796-2800
FP	Daniel, Sam V.	574 Locust, Conway 72032	329-6111
FP	Dobbs, John C.	#1 Medical Lane, Conway 72032	329-2948
IM	Furlow, William C.	Post Office Box 1367, Conway 72032	327-1325
R	Garrison, James S	Conway Memorial Hospital, Conway 72032	329-3831, Ext. 185
FP	Gordy, L. Fred, Jr	552 Locust, Conway 72032	329-6881
OPH	Hendrickson, Richard O., Jr	939 Locust, Conway 72032	329-1151
OPH	Magie, J. J.	1504 Caldwell, Conway 72032	327-4444
OBG	McChristian, Paul L	2519 College Avenue, Conway 72032	327-6547
FP	Ross, Rex W	#1 Medical Lane, Conway 72032	329-2948
FP	Smith, John D	923 Parkway, Conway 72032	329-3824
GP	Smith, Lander A	923 Parkway, Conway 72032	329-3824
IM	Watson, John W	Post Office Box 1367, Conway 72032	327-1325
FP	White, Tommie G	Post Office Box 1386, Conway 72032	329-2946
		FRANKLIN COUNTY	
FP	Gibbons, David L	Post Office Box 136, Ozark 72949	667-4165
IM	Jefferson, Christina M	Post Office Box 1057, Ozark 72949	667-4021
PD	Jefferson, Thomas C	Post Office Box 1057, Ozark 72949	667-4021
ADM	Long, C. C.	Post Office Box 1208, Fort Smith 72902	782-8218
GS	Smith, John C.	Post Office Box 928, Ozark 72949	667-1274
		GARLAND COUNTY	
RD	Adams, Frank M	26 Circle Drive, Hot Springs 71901 (Res.)	623-9676
AN	Aquino, Al	229 Hazel, Hot Springs 71901	623-8602
U	Aspell, Robert W.	200 Whittington, Suite 106, Hot Springs 71901	321-9013
RD	Atkinson, Robert H	1305 Richard, Hot Springs 71913 (Res.)	624-5676
IM	Bodemann, Michael C.	615 West Grand, Suite 5, Hot Springs 71901	623-2781
IM	Bodemann, Stephen L	615 West Grand, Suite 5, Hot Springs 71901	623-2781
RD	Bohnen, L. O	806 Ramble, Hot Springs 71901 (Res.)	624-2208
OTO	Borg, Robert V	100 Ridgeway, Suite 2, Hot Springs 71901	624-5422
OPH	Bracken, Ronald J	505 West Grand, Suite 201, Hot Springs 71901	624-4478
OPH	Braley, Richard E.	615 West Grand, Suite 7, Hot Springs 71901	624-1196
OPH	Braun, James R.	126 Hawthorne, Hot Springs 71901	624-0609
GS	Brunner, John H	101 Whittington, Hot Springs 71901	321-2229
EM	Bumpas, Timothy F	Ouachita Memorial Hospital, Hot Springs 71901	624-5702
RD	Burton, Frank M.	106 Trivista Right, Hot Springs 71901 (Res.)	623-8323
U	Burton, James F	101 Whittington, Hot Springs 71901	321-2229
GS	Campbell, James W	3100 Malvern, Suite 201, Hot Springs 71901	624-5700
D	Cates, Jack A.	100 Ridgeway Place, Hot Springs 71901	624-3376
GS	Chamberlain, Joe W	330 Sixth, Hot Springs 71913	623-4477
RHU	Clardy, Edgar K	Post Office Box 850, Hot Springs 71902	623-9684
FP	Clark, Robert B	328 Ouapaw, Hot Springs 71901	321-9292
AN	Clayton, Laura F.	229 Hazel, Hot Springs 71901	623-8602
GS	Crabtree, John H	236 Central, Suite 300, Hot Springs 71901	623-4904
R	Cupp, Cecil W., III	911 West Grand, Hot Springs 71913	623-6693
RD	Daniel, R. L.	125 Carl Drive, #58, Hot Springs 71913 (Res.)	623-9753
AN	Davis, Sheryl L.	300 St. Louis Place, Hot Springs 71913	623-9216
RD	Dembinski, T. Henry	130 Cedar Lane, Hot Springs 71901	767-6210
RD	Dodson, John W., Jr.	16 Cedar Circle, Hot Springs 71901 (Res.)	623-1025
GE	Dunn, Richard W	133 Arbor, Suite B, Hot Springs 71901	623-4898
RD	Edwards, G. A	1 Magda Lane, Hot Springs Village 71909 (Res.)	922-0552
GS	Eisele, W. Martin	101 Whittington, Hot Springs 71901	321-2229
OBG	Finan, E. Michael	3100 Malvern Avenue, Suite 401, Hot Springs 71901	623-6455
R	Fore, Robert W	911 West Grand, Hot Springs 71913	623-6693
GP	Fotioo, George J.	505 Central Tower Building, Hot Springs 71901	623-5121
RD	French, James H	Route 2, Box 27, Hot Springs 71901 (Res.)	262-2338
GP	Gardial, J. Richard	125 Greenwood, Hot Springs 71901	623-3373
FP	Gardner, James L.	125 Greenwood, Hot Springs 71901	623-0904
RD	Garner, Onyx P	(Address unknown)	
NS	Gocio, Allan C.	100 Ridgeway, Suite 1, Hot Springs 71901	321-1329
FP	Graham, Richard F.	505 West Grand, Suite 301, Hot Springs 71901	623-4391
OTO	Griffin, James E.	100 Ridgeway, Suite 2, Hot Springs 71901	624-5422
OBG	Haggard, John L.	101 Whittington, Hot Springs 71901	321-2229
OTO	Harper, Edwin L.	100 Ridgeway, Suite 2, Hot Springs 71901	624-5422
FP	Hechanova, D. M., Jr	1315 Central, Hot Springs 71901	624-5206
CD	Heinemann, Fred M	ABT Towers, #504, Hot Springs 71901	624-6641
GS	Hill, Robert L	905 West Grand, Hot Springs 71913	623-9581
FP	Hollis, Thomas H	125 Greenwood, Hot Springs 71901	623-3373
CDS	Howe, H. Joe	101 Whittington, Hot Springs 71901	321-2229
AN	Humphreys, Robert P	229 Hazel, Hot Springs 71901	623-7601
D	Irwin, William G	Post Office Box 2588, Hot Springs 71913	321-9455
P	Jackson, George W	901 West Grand, Hot Springs 71913	623-3502
GYN	Jackson, Haynes G.	Post Office Box 880, Hot Springs 71902	623-6628
OBG	Jackson, Haynes G., Jr	Post Office Box 880, Hot Springs 71902	623-6628
CD	Jayaraman, K. K.	2513 Malvern, Hot Springs 71901	321-2513

Type of Practice	Member's Name	Address	Telephone Number
PTH	Jayaraman, V Devi	Post Office Box 1153, Hot Springs 71902	624-4547
IM	Jayasundera, Naomal S	200 Whittington, #508, Hot Springs 71901	623-7163
PD	Johnson, Paulette S.	225 Linden, Suite 3, Hot Springs 71901	623-5220
PUD	Johnson, Robert D	225 Linden, Suite 3, Hot Springs 71901	623-5220
OPH	Johnston, Gaither C	99 Little Pine, Hot Springs 71901	624-7106
PM	Jumper, Mark W	105 Reserve, Hot Springs 71901	624-4411
GS	Kaler, Ron A	905 West Grand, Hot Springs 71913	623-9581
GP	Keadle, William R	Post Office Box P, Glenwood 71943	356-3155
OBG	Kimberlin, G Dan	Post Office Box 880, Hot Springs 71902	623-6628
ORS	Kincheloe, A Dale	133 Arbor, Suite A, Hot Springs 71901	321-2663
RD	King, Leeman H	610 Ramble, Hot Springs 71901 (Res.)	623-8185
ORS	Kleinhenz, Robert W	133 Arbor, Suite A, Hot Springs 71901	321-2663
AN	Klugh, Walter G, Jr	300 St. Louis Place, #306, Hot Springs 71913	623-9216
FP	Koehn, Martin A	328 Ouapaw, Hot Springs 71901	321-9292
CDS	Krishnan, Bhaktan	600 Central Tower Building, Hot Springs 71901	624-2524
P	Lane, Charles S., III	225 Linden, Suite 4, Hot Springs 71901	624-4490
IM	Lang, Patricia A	8 Cordoba Center, Hot Springs Village 71909	922-0575
PTH	Lee, William R	Post Office Box 1460, Hot Springs 71902	623-2518
P	Lewis, Robert L.	Post Office Box 850, Hot Springs 71902	624-2354
GP	Lovell, Clawrence R.	414 Albert Pike, Hot Springs 71913	624-1211
PM	Madsen, Henrik, II	311 Whittington, Hot Springs 71901	624-5940
GS	Mahone, J Kelly	905 West Grand, Hot Springs 71913	623-9581
IM	Maruthur, Gopakumar	133 Arbor, Hot Springs 71901	623-1545
FP	Mashburn, William R	99 Little Pine, Hot Springs 71901	623-4453
ORS	McConkie, Stuart B	200 Whittington, Suite 111, Hot Springs 71901	623-5300
GYN	McCrary, Robert F	211 Hobson, Hot Springs 71913	321-2217
NEP	McCrary, Robert F, Jr	3100 Malvern Avenue, Suite 102, Hot Springs 71901	321-9803
PD	McFarland, Louis R	211 Hobson, Hot Springs 71913	321-1314
GP	McMahan, James C	306 Albert Pike, Hot Springs 71913	624-2111
GS	Meek, Gary N	905 West Grand, Hot Springs 71913	623-9581
OM	Morrison, David R.	Post Office Box 128, Malvern 72104	844-3292
R	Munos, Louis R	224 Bafanridge, Hot Springs 71901 (Res)	624-0040
PD	Newton, Doane M	236 Woodbine, Hot Springs 71901	321-2546
CD	Pai, B V	200 Whittington, Suite 509, Hot Springs 71901	623-7510
CD	Pandit, Sudhir K	2513 Malvern Avenue, Hot Springs 71901	321-2513
OBG	Pappas, Deno P	101 Whittington, Hot Springs 71901	321-2229
FP	Parkerson, Cecil W	1421 Central, Hot Springs 71901	624-3341
RD	Peeples, Raymond E.	Route 19, Box 254, Hot Springs 71913 (Res)	262-3346
PTH	Pemmaraju, Seshagirirao	208 Ridge One, Hot Springs 71901 (Res)	624-2691
OBG	Powell, Brenda N	3100 Malvern Avenue, Suite 401, Hot Springs 71901	623-6455
OBG	Rainwater, W Sloan	101 Whittington, Hot Springs 71901	321-2229
ONC	Reddy, P	99 Little Pine, Suite 1, Hot Springs 71901	623-2731
PD	Robert, Jon M	236 Woodbine, Hot Springs 71901	321-2546
RHU	Robertson, Fred T	Post Office Box 850, Hot Springs 71902	624-1281
RD	Rosenzweig, Joseph L.	132 Peninsula Point Drive, Hot Springs 71901 (Res)	262-3756
RD	Sanders, Hallman E.	220 Bafanridge, Hot Springs 71901 (Res.)	624-2869
GP	Seifert, Kenneth A	Post Office Box 8440, Hot Springs Village 71909	984-6166
EM	Shelby, Eugene M.	100 Whittington, Hot Springs 71901	624-5451
GER	Shriner, Walter	Post Office Box 8440, Hot Springs Village 71909	984-6166
CD	Shroff, Rajesh K	2513 Malvern Avenue, Hot Springs 71901	321-2513
FP	Simpson, John B	328 Ouapaw, Hot Springs 71901	321-9292
GE	Slaton, G Don	304 St Louis, Hot Springs 71913	623-3334
ORS	Smith, Bruce L., Jr.	133 Arbor, Suite A, Hot Springs 71901	321-2663
R	Smith, Phillip L.	911 West Grand, Hot Springs 71913	623-6693
IM	Sorrels, John W	615 West Grand, Suite 5, Hot Springs 71901	623-2781
R	Springer, Melvin R, Jr.	911 West Grand, Hot Springs 71913	623-6693
R	Springer, William Y	911 West Grand, Hot Springs 71913	623-6693
FP	Stecker, Elton H., Jr	1315 Central, Hot Springs 71901	624-5206
FP	Stecker, Rheeta M.	1315 Central, Hot Springs 71901	624-5206
D	Stough, D. B., III	99 Little Pine, Hot Springs 71901	624-0673
OPH	Thomas, Al	Post Office Drawer D, Hot Springs 71902	624-1204
OBG	Thompson, Thomas P., Jr	3100 Malvern Avenue, Suite 301, Hot Springs 71901	623-4410
PD	Trieschmann, John W	Post Office Box 2458, Hot Springs 71913	321-2546
N	Tucker, R. Paul	Post Office Box 1213, Hot Springs 71901	623-7762
RD	Wade, H King, Jr	118 Trivista Right, Hot Springs 71901 (Res.)	623-9426
OPH	Wallace, Thomas R	126 Hawthorne, Hot Springs 71901	624-0609
PS	Walley, Luther R.	200 Whittington Avenue, Suite 406, Hot Springs 71901	624-5466
GP	Wilson, William C	101 Doris Lane, Hot Springs 71913	623-1151
U	Woodward, Philip A	903 West Grand, Hot Springs 71913	623-8110
U	Wright, Charles C.	903 West Grand, Hot Springs 71913	623-8110
IM	Wright, William J	211 Hobson, Hot Springs 71913	624-3312

GRANT COUNTY

GP	Irvin, Jack M.	205 West High, Sheridan 72150	942-3171
FP	Paulk, Clyde D	Post Office Box 307, Sheridan 72150	942-5155

GREENE-CLAY COUNTY

	Baker, A J	237 Rancho Vieto Boulevard, Brownsville, Texas 78521	512-831-2388
GP	Baker, Clark M	115 West Court, Paragould 72450	236-6356
PTH	Boggs, Dwight F	#1 Medical Drive, Paragould 72450	239-7131
FP	Bonner, J. Darrell	1015 West Kingshighway, Paragould 72450	239-4076
FP	Cagle, Roger E.	#1 Medical Drive, Paragould 72450	239-8504
GP	Collier, George H, Jr	Post Office Box 36, Paragould 72450	236-6911
FP	Collier, Jon D.	#5 Market Place, Paragould 72450	236-6911
GP	Crow, Asa A	#1 Medical Drive, Paragould 72450	239-8504
FP	Duckworth, Hillard R	Post Office Box 303, Piggott 72454	598-2236
GP	Futrell, J B	414 West 2nd, Rector 72461	595-3332
OPH	Hardcastle, R Lowell	#1 Medical Drive, Paragould 72450	236-6948
RD	Harper, Bland R	Post Office Box C, Monette 72447 (Res)	486-5719
ORS	Hazzard, Marion P	#1 Medical Drive, Paragould 72450	236-6996
FP	Hobby, George A.	#1 Medical Drive, Paragould 72450	239-8579
U	Jones, Bryant W	#1 Medical Drive, Paragould 72450	239-2585
FP	Kemp, Clarence L.	#1 Medical Drive, Paragould 72450	239-8504
GS	Lawson, J Larry	#1 Medical Drive, Paragould 72450	239-5916
AN	Martin, Richard O	Post Office Box 339, Paragould 72450	239-7194
RD	McKelvey, Earle D	319 Grandview, Clarksville 72830 (Res)	754-2382
GP	Mitchell, Bennie E	901 West Kingshighway, Paragould 72450	239-8576
FP	Muse, Jerry L.	Post Office Box 303, Piggott 72454	598-2236
GP	Page, Billie C	#1 Medical Drive, Paragould 72450	236-6930
R	Purcell, Donald I.	Post Office Box 339, Paragould 72450	239-8431
PTH	Richmond, Jack G	Post Office Box 339, Paragould 72450	236-7733
PD	Romano-Sembrano, Elnora P	Post Office Box 87, Corning 72422	857-6971
GS	Sellars, John R	#1 Medical Drive, Paragould 72450	239-5926
FP	Sembrano, Romeo Y	Post Office Box 87, Corning 72422	857-6971
FP	Shedd, Leonus L	1015 West Kingshighway, Paragould 72450	239-4076
IM	Sheridan, James G	425 West Jackson, Piggott 72454	598-2237

Type of Practice	Member's Name	Address	Telephone Number
FP	Shotts, C. Mack, Jr	#1 Medical Drive, Paragould 72450	239-8505
PD	Shotts, Vern Ann	1204 West Kingshighway, Paragould 72450	239-4076
FP	Watson, Samuel D	901 West Kingshighway, Paragould 72450	236-8591
IM	White, Robert B	#1 Medical Drive, Paragould 72450	239-9549
FP	Williams, Dwight M.	#1 Medical Drive, Paragould 72450	236-6956
FP	Williams, Jacob M.	1015 West Kingshighway, Paragould 72450	239-4076

HEMPSTEAD COUNTY

FP	Branch, James W., Sr.	420 South Main, Hope 71801	777-4636
PTH	Dodd, N. Leland	Post Office Box 1118, Hope 71801	777-9324
GP	Goins, Dale E	Post Office Box 550, Hope 71801	777-2131
GP	Harris, Lowell O.	Post Office Box 550, Hope 71801	777-2131
FP	Holt, Forney G.	300 East 6th, Texarkana 75502	772-3211
GS	Martindale, James G.	Route 2, Box 128, Pinecrest Drive, Hope 71801 (Res.)	777-2783
GP	McKenzie, Jim	Post Office Box 687, Hope 71801	777-2321
R	Stevens, David G	Post Office Box 1418, Hope 71801	777-2323
FP	Warmack, Asa M.	Post Office Box 687, Hope 71801	777-2321
FP	Wright, George H	405 West 16th, Hope 71801	777-8110

HOT SPRING COUNTY

IM	Bollen, A. Ray	1002 Schneider Drive, Malvern 72104	337-0389
GP	Brashears, Larry B	1234 South Main, Malvern 72104	332-5245
IM	Burton, Bruce K	2223 Grant, Malvern 72104	337-9031
FP	Clark, Curtis B.	294 Summar Avenue, Jackson, Tennessee 38301	901-423-1932
FP	Cobb, Russell W	1420 Potts, Malvern 72104	332-3112
AN	Ellis, C. Randolph	1004 South Main, Malvern 72104	332-6941
GP	Kersh, N. B.	1518 McBee, Malvern 72104	337-7533
GS	Murphy, Kenneth	1002 Schneider Drive, Suite 102, Malvern 72104	337-4935
FP	Peters, Claude F	1420 Potts, Malvern 72104	332-2521
GP	Vaughan, John A.	1002 Schneider Drive, Malvern 72104	332-2371
FP	White, Bruce A	1002 Schneider Drive, Suite 104, Malvern 72104	337-9066
FP	White, Robert H	1004 Dyer, Malvern 72104	332-3664

HOWARD-PIKE COUNTY

IM	Atha, Timothy C.	Post Office Box 1777, Nashville 71852	845-4384
FP	Buckley, Douglas A.	Post Office Box 834, Nashville 71852	845-4622
GP	Chambers, William H	Post Office Box 1750, Nashville 71852	845-4041
GP	Gullett, A. Dale	Post Office Box 98, Dierks 71833	286-3154
GS	Hearnsberger, John E.	Post Office Box 508, Nashville 71852	845-1761
FP	Humphreys, T. J.	Post Office Box 575, Nashville 71852	845-2922
GP	Jones, William J.	Post Office Box 49, Glenwood 71943	356-3921
FP	King, Joe D	Post Office Box 549, Nashville 71852	845-1933
FP	Peebles, Samuel W	120 West Sypert, Nashville 71852	845-4676
R	Pye, Ted H.	Post Office Box 1690, Nashville 71852	845-5341
GP	Turbeville, James O.	Post Office Box 432, Murfreesboro 71958	285-2182
GP	Ward, Hiram T	Post Office Box 319, Murfreesboro 71958	285-2491
FP	White, Phillip L.	Post Office Box 538, Murfreesboro 71958	285-3118
#	Wilmoth, Marion H.	Nashville	

INDEPENDENCE COUNTY

ORS	Allen, J. David	501 Virginia Drive, Suite C, Batesville 72501	793-2371
FP	Baker, John R	Post Office Box 2001, Batesville 72503	793-5356
FP	Beck, Carl T.	Post Office Drawer J, Mountain View 72560	269-3834
R	Bess, Lloyd G.	1490 Byers, Batesville 72501	793-2207
U	Day, Charles H.	Post Office Box 2116, Batesville 72503	698-1808
P	Goodin, William H., Jr.	12 Hospital Circle, Suite B, Batesville 72501	793-4831
PTH	Hill, John M., Jr.	Post Office Box 2113, Batesville 72503	793-5251
OBG	Jones, E. J.	409 Virginia Drive, Batesville 72501	793-4300
OPH	Jones, Edward T.	180 North 5th, Batesville 72501	793-5257
GS	Ketz, Wesley J.	Post Office Box 2695, Batesville 72503	793-2321
GS	Lambert, John S	501 Virginia Drive, Batesville 72501	698-1846
ORS	Luter, Dennis W	501 Virginia Drive, Batesville 72501	793-2371
FP	Lytle, Jim E.	Post Office Box 2116, Batesville 72503	793-6663
R	McClain, Charles M., Jr	1490 Byers, Batesville 72501	793-2207
GP	Moody, Lackey G.	Post Office Box 2335, Batesville 72503	793-6887
GP	Raney, Troy	Post Office Box 83, Cave City 72521	283-5762
FP	Scott, John G.	Post Office Box 2116, Batesville 72503	793-1126
GP	Slaughter, Bob L.	Post Office Box 2416, Batesville 72503	793-2540
FP	Smith, Bob G	Post Office Box 2116, Batesville 72503	793-9352
IM	Smith, Terry R.	501 Virginia Drive, Suite B, Batesville 72501	793-8374
GS	Stalker, James M.	Post Office Box 2575, Batesville 72503	793-5205
GS	Strickland, Nathan E.	501 Virginia Drive, Batesville 72501	698-1846
GP	Taylor, Chaney W	Post Office Box 2116, Batesville 72503	793-5251
RD	Taylor, Charles A.	Route 7, Box 649A, Batesville 72501 (Res.)	793-2836
GP	Tucker, Charles L.	Post Office Box 38, Ash Flat 72513	994-7301
AN	Turner, Samuel R	920 15th Street, Batesville 72501	793-1133
IM	Walton, Robert B.	12 Hospital Circle, Suite A, Batesville 72501	793-2223
FP	Webster, Russell P	Post Office Box 2116, Batesville 72503	793-4711

JACKSON COUNTY

IM	Ashley, John D., Jr	2000 McLain, Newport 72112	523-6721
PD	Austin, Lester K., Jr.	801 Osler Drive, Jonesboro 72401	932-2423
GS	Carney, J. W.	Post Office Box 699, Newport 72112	523-3489
R	Chauhan, Mufiz A	Post Office Box 1070, Newport 72112	523-6591
IM	Dudley, Guilford M	2000 McLain, Newport 72112	523-5272
GP	Fisher, Timothy M	1205 McLain, Newport 72112	523-5167
U	Foote, John W.	2000 McLain, Newport 72112	523-5838
GS	Frankum, Jerry M., Jr.	Post Office Box 606, Newport 72112	523-5879
GP	Green, Roger L.	Post Office Box 159, Newport 72112	523-9852
RD	Harris, M. Haymond	501 Walnut, Newport 72112 (Res.)	523-5168
OBG	Hergenroeder, Paul J	Post Office Box 39, Newport 72112	523-6728
OBG	Jackson, Jabez F., Jr	Post Office, Box A, Newport 72112	523-3289
RD	Jackson, Jabez F., Sr.	304 Ash, Newport 72112 (Res.)	523-8314
FP	Junkin, A. Bruce	Post Office Box 69, Newport 72112	523-3666
RD	Junkin, Ruth H.	1012 Holden, Newport 72112 (Res.)	523-3238
ORS	Lopez, Ramon E.	1902 McLain, Newport 72112	523-2942
GS	Poon, Hon K.	Post Office Box 206, Newport 72112	523-6796
FP	Reynolds, Roland C.	2000 McLain, Newport 72112	523-5660
RD	Williams, Thomas E.	12 Park Place, Newport 72112 (Res.)	523-6121
R	Young, Jack S., III	Post Office Box 67, Newport 72112	523-8115

JEFFERSON COUNTY

FP	Alexander, Lester T.	Post Office Box 1226, Pine Bluff 71613	541-7189
RD	Anderson, Charles W	1411 Olive, Pine Bluff 71601 (Res.)	535-1661
FP	Armstrong, Simmie, Jr.	1716 Doctors Drive, Pine Bluff 71603	535-6461

Type of Practice	Member's Name	Address	Telephone Number
AN	Atkinson, Evangelina C.	1402 West 42nd, Pine Bluff 71603	535-5522
FP	Atnip, Gwyn	1111 West 15th, Pine Bluff 71603	535-3551
FP	Attwood, H. M	Post Office Box 525, Rison 71665	325-6255
FP	Bell, Carl H., Jr	1602 West 42nd, Pine Bluff 71603	535-4850
ORS	Blackwell, Banks	Post Office Box 1406, Pine Bluff 71613	534-3122
**FP	Boswell, Clifford A	1421 Cherry, Pine Bluff 71601	541-0770
OBG	Bracy, Calvin M	1301 West 43rd, Pine Bluff 71603	536-7550
U	Brooks, R. Teryl, Jr	1801 West 40th, Suite 1-B, Pine Bluff 71603	536-7758
NS	Brown, Michael W	1801 West 40th, Suite 4-A, Pine Bluff 71603	536-8547
OTO	Buckley, J. Wayne	Post Office Box 1550, Pine Bluff 71613	535-5719
P	Burford, Thomas G	4313 West Markham, Little Rock 72201	664-4500
PD	Burke, Bryan L., Jr	1420 West 43rd, Pine Bluff 71603	534-6210
GE	Butler, Robert C.	1801 West 40th, Pine Bluff 71603	536-7660
PUD	Campbell, James C., Jr.	1604 West 42nd, Pine Bluff 71603	536-8507
AN	Carlisle, David L.	1402 West 42nd, Pine Bluff 71603	535-5522
P	Carlton, Irvin L.	Post Office Box 1019, Pine Bluff 71613	534-1834
FP	Cheek, Ben H	Post Office Box 1285, Pine Bluff 71613	541-7189
PTH	Clark, James F., Jr.	1515 West 42nd, Pine Bluff 71603	541-7528
**FP	Clark, James T., Jr	1421 Cherry, Pine Bluff 71601	541-0770
FP	Coker, L. Randle	Post Office Box 276, Star City 71667	628-4292
**FP	Crawford, Cary M	1421 Cherry, Pine Bluff 71601	541-0770
IM	Crenshaw, John	4201 Mulberry, Pine Bluff 71603	535-2200
**FP	Cummins, J. Craig	1421 Cherry, Pine Bluff 71601	541-0770
**FP	Dalby, Robert D.	1421 Cherry, Pine Bluff 71601	541-0770
D	Davis, Charles M.	1416 West 43rd, Pine Bluff 71603	535-7477
IM	Dedman, John D	4201 Mulberry, Pine Bluff 71603	535-2200
CD	Deneke, William A.	1612 West 42nd, Pine Bluff 71603	536-3015
OBG	Devi, Talluri S.	1801 West 40th, Suite 4E, Pine Bluff 71603	536-0974
#	Dickins, Robert D., Sr	Pine Bluff	
**FP	Duckworth, Thomas S	1421 Cherry, Pine Bluff 71601	541-0770
EM	Edmiston, Frank G	18101 Fawn Tree Drive, Little Rock 72209 (Res.)	455-1315
R	Fendley, Claude E.	Post Office Box 7863, Pine Bluff 71611	534-8651
GP	Flowers, Martha A	119 East 4th, Pine Bluff 71601	534-5523
GS	Forestiere, Lee A	1801 West 40th, Suite 5B, Pine Bluff 71603	534-4188
FP	Freeman, William H	1421 Cherry, Pine Bluff 71601	541-0770
N	Frigon, Jacquelyn S.	4303 Mulberry, Suite B, Pine Bluff 71603	535-4800
R	Fuller, C. James, III	1801 West 40th, Suite 2C, Pine Bluff 71603	534-8651
NEP	Gaston, Robert S	4301 West Markham, Little Rock 72201	661-5295
RD	Glasscock, Robert E.	3218 Elm, Pine Bluff 71603 (Res.)	534-6538
PD	Green, Horace L.	1420 West 43rd, Pine Bluff 71603	534-6210
IM	Green, Linda Haynie	1600 West 42nd, Pine Bluff 71603	534-6570
ORS	Gullett, Robert R., Jr	1801 West 40th, Suite 6-A, Pine Bluff 71603	536-7579
R	Hardin, J. David	Post Office Box 7863, Pine Bluff 71611	534-8651
IM	Harper, William F	1801 West 40th, Suite 1-A, Pine Bluff 71603	536-9230
PD	Hart, J. Clyde, Jr	1420 West 43rd, Pine Bluff 71603	534-6210
R	Hegwood, H. Melvin	Post Office Box 7863, Pine Bluff 71611	534-8651
EM	Henderson, Francis M.	209 North Blake, Pine Bluff 71601	536-6600
FP	Highsmith, Vivian F.	1421 Cherry, Pine Bluff 71601	541-0770
IM	Hoover, S. H	1708 West 42nd, Pine Bluff 71603	536-7300
**FP	Hopkins, Karmen	1421 Cherry, Pine Bluff 71601	541-0770
**FP	Horton, Charles R.	1421 Cherry, Pine Bluff 71601	541-0770
OPH	Hughes, L. Milton	1414 West 43rd, Pine Bluff 71603	536-7738
FP	Hussain, Shafqat	1801 West 40th, Suite 4-B, Pine Bluff 71603	535-4640
RD	Hutchison, E. L.	Route 2, Box 375, Heber Springs 72543 (Res.)	362-5165
OBG	Hyman, Carl A.	121 East 4th, Pine Bluff 71601	534-3365
OBG	Hyman, Carl E.	121 East 4th, Pine Bluff 71601	534-3365
N	Ingram, Thomas E.	1726 Doctors Drive, Pine Bluff 71603	535-4803
GS	Irwin, Raymond A., Jr.	1220 West 42nd, Pine Bluff 71603	535-2101
U	Jacks, David C.	4303 Mulberry, Suite A, Pine Bluff 71603	535-4221
P	James, William J.	Post Office Box 1019, Pine Bluff 71613	534-1834
CD	Jenkins, B. J.	1612 West 42nd, Pine Bluff 71603	536-3015
AN	Jenkins, Mary Ellen	1402 West 42nd, Pine Bluff 71603	535-5522
GS	Johnson, Horace	2526-B East Harding, Pine Bluff 71601	534-3910
**FP	Jones, Michael E.	1421 Cherry, Pine Bluff 71601	541-0770
R	Joseph, Aubrey S	Post Office Box 7863, Pine Bluff 71611	534-8651
FP	Justiss, Richard D	1222 West 42nd, Pine Bluff 71603	535-1819
OBG	Kaipa, Siva P	1801 West 40th, Suite 7A, Pine Bluff 71603	535-1025
AN	Khan, Mahmood A	1402 West 42nd, Pine Bluff 71603	535-5522
OPH	King, Y. Y	4800 South Hazel, Pine Bluff 71603	536-1897
OTO	Langston, Lloyd G	Post Office Box 1550, Pine Bluff 71613	535-5719
GS	Ligon, Ralph E.	1801 West 40th, Suite 5B, Pine Bluff 71603	534-4188
R	Lim, William N	Post Office Box 7863, Pine Bluff 71611	534-8651
FP	Lindsey, James A.	1222 West 42nd, Pine Bluff 71603	535-1819
ORS	Lipscomb, Larry G.	1801 West 40th, Suite 6-A, Pine Bluff 71603	536-7579
D	Lum, Don	4301 Mulberry, Suite B, Pine Bluff 71603	541-0400
GS	Mabry, Charles D.	1801 West 40th, Suite 7-B, Pine Bluff 71603	535-8280
ORS	Martin, Kenneth A	1801 West 40th, Suite 4-C, Pine Bluff 71603	535-1104
FP	Maynard, Ross E.	115 East Fifth, Suite 303, Pine Bluff 71601	534-5732
R	McDonald, Robert L.	Post Office Box 7863, Pine Bluff 71611	534-8651
OPH	McFarland, Mike S	1801 West 40th, Suite 5-C, Pine Bluff 71603	536-4100
GS	McQuirter, Wroten, Jr	1710 Doctors Drive, Pine Bluff 71603	535-3326
NEP	Mehta, Shyam P	4400 Mulberry, Pine Bluff 71603	536-6105
GS	Meredith, William R	1704 West 42nd, Pine Bluff 71603	535-8727
PUD	Miller, Donald L	1515 West 42nd, Pine Bluff 71603	541-7611
R	Milligan, Monte C.	Route 1, Box 640, Pine Bluff 71603	352-3442
RD	Monroe, Sanford C	1600 West 35th, Pine Bluff 71603 (Res.)	534-1130
**FP	Mooser, Paul J	1421 Cherry, Pine Bluff 71601	541-0770
RD	Morris, Harold J	#12 Lakewood Lane, Pine Bluff 71603 (Res.)	534-8354
**FP	Nichol, C. M	1421 Cherry, Pine Bluff 71601	541-0770
OPH	Nixon, William R.	1716 West 42nd, Pine Bluff 71603	534-2624
IM	Nuckolls, J. William	1801 West 40th, Suite 1-C, Pine Bluff 71603	541-0222
CD	Pearce, Malcolm B	1612 West 42nd, Pine Bluff 71603	536-3015
FP	Perry, V. Bryan	1722 West 42nd, Pine Bluff 71603	535-4141
GYN	Pierce, J. R., Jr	1702 West 42nd, Pine Bluff 71603	535-3443
OBG	Pierce, Ruston Y.	1702 West 42nd, Pine Bluff 71603	535-3443
FP	Raney, Oliver C.	1721 West 42nd, Pine Bluff 71603	534-5861
ORS	Reed, E. Frank, Jr.	916 Cherry, Pine Bluff 71601	535-0121
HEM	Reid, Ishmael S., Jr	817 Cherry, Pine Bluff 71601	535-1880
PD	Reid, Lloyene B.	1420 West 43rd, Pine Bluff 71603	534-6210
**FP	Ridling, Anna T	1421 Cherry, Pine Bluff 71601	541-0770
GS	Rittelmeyer, Clarence M	1704 West 42nd, Pine Bluff 71603	535-8727
OBG	Roaf, Sterling A	1310 Linden, Pine Bluff 71602	536-4602
GS	Roberson, George V., Jr.	1801 West 40th, Suite 7-B, Pine Bluff 71603	535-2716
GP	Robinette, Joseph S.	1718 Doctors Drive, Pine Bluff 71603	535-2372
GE	Rogers, Henry L.	1801 West 40th, Pine Bluff 71603	536-7660
OBG	Ross, Robert L.	1305 West 43rd, Pine Bluff 71603	534-8993
AN	Samuel, Ferdinand K.	Post Office Box 1272, Pine Bluff 71613	535-7457

Type of Practice	Member's Name	Address	Telephone Number
OTO	Shorts, Stephen D.	Post Office Box 1550, Pine Bluff 71613	535-5719
GYN	Simmons, Calvin R	1714 West 42nd, Pine Bluff 71603	535-3213
NS	Simpson, P B, Jr	1801 West 40th, Suite 4-A, Pine Bluff 71603	536-8547
PD	Smith, Paul L.	Post Office Box 1648, Pine Bluff 71613	536-4566
RD	Stern, Howard S.	2404 West 47th, Pine Bluff 71603 (Res.)	NF
GS	Sullenberger, A G	1726 West 42nd, Pine Bluff 71603	534-4407
FP	Tanner, Ronald D	1718 Doctors Drive, Pine Bluff 71603	535-2372
FP	Taylor, Richard L	1421 Cherry, Pine Bluff 71601	541-0770
**FP	Throneberry, Bart	1421 Cherry, Pine Bluff 71601	541-0770
PTH	Tisdale, Alfred D, Jr.	1515 West 42nd, Pine Bluff 71603	541-7524
PD	Townsend, Thomas E	1420 West 43rd, Pine Bluff 71603	534-6210
IM	Tracy, C. Clyde	4201 Mulberry, Pine Bluff 71603	535-2200
FP	Waheed, Atiya N	1608 West 42nd, Pine Bluff 71603	536-9700
AN	Walajahi, Fawad H	Post Office Box 1272, Pine Bluff 71613	535-7457
GS	Wilkins, Walter J, Jr.	1220 West 42nd, Pine Bluff 71603	535-2102
IM	Wineland, H L.	1710 West 42nd, Pine Bluff 71603	534-3561
A	Worrell, Aubrey M, Jr	3900 Hickory, Pine Bluff 71603	535-8200
	Yalamanchili, R R	Houston, Texas	

JOHNSON COUNTY

GS	McKelvey, Richard E.	Post Office Box 440, Clarksville 72830	754-6510
RD	Shrigley, Guy P	Post Office Box 70, Clarksville 72830 (Res.)	754-3236
FP	Taylor, George W	Post Office Box 668, Clarksville 72830	754-8384
FP	West, Boyce W	Post Office Box 220, Clarksville 72830	754-6661

LAFAYETTE COUNTY

GP	Ditsch, Craig E.	Post Office Box 276, Stamps 71860	533-4461
RD	Lee, Willie J	Box 88, Lake Hamilton 71951 (Res.)	NF

LAWRENCE COUNTY

#	Cruse, Edward J	Black Rock	
RD	Dickey, A B	704 Northwest 3rd, Walnut Ridge 72476 (Res.)	886-5377
#	Elders, J. B	Walnut Ridge	
GP	Hann, John R	Post Office Box 456, Imboden 72434	869-2294
FP	Hughes, Joe E.	Post Office Box 719, Walnut Ridge 72476	886-3543
IM	Joseph, Ralph F	Post Office Box 109, Walnut Ridge 72476	886-3211
FP	Lancaster, Ted S	Post Office Box 719, Walnut Ridge 72476	886-3543
IM	Quevillon, Robert D.	421 Southwest 3rd, Walnut Ridge 72476	886-9575
R	Smoot, John D.	Post Office Box 659, Walnut Ridge 72476	886-1244
FP	Spades, S A	Post Office Box 719, Walnut Ridge 72476	886-3543
GS	Wilson, Stephen K	Post Office Box 591, Walnut Ridge 72476	886-6409

LEE COUNTY

GP	Fields, E. C.	77 West Main, Marianna 72360	295-5244
FP	Gray, Dwight W	110 West Chestnut, Marianna 72360	295-3131
GP	Ly, Duong N	29 West Tennessee, Marianna 72360	295-2543

LITTLE RIVER COUNTY

FP	Armstrong, James D	Post Office Box 637, Ashdown 71822	898-3306
IM	Gillean, John A, III	300 East Sixth, Texarkana 75502	774-3211
RD	Peacock, Norman W, Jr	Route 2, Peacock Addition, Ashdown 71822 (Res.)	898-3353
FP	Shelton, Joe G, Jr	Post Office Box 697, Ashdown 71822	898-3306
EM	Wade, Billy K	Post Office Box 126, Ashdown 71822	774-2121

LOGAN COUNTY

FP	Baskerville, Jerry R	Post Office Box 625, Paris 72855	963-2132
FP	Daniel, William R	Post Office Box 110, Booneville 72927	675-2455
FP	Enns, Wayne P	Post Office Box 625, Paris 72855	963-2132
GP	Harbison, James D	Post Office Box 327, Booneville 72927	675-2121, Ext. 242
GP	Hutson, Sanford E., III	Post Office Box 188, Paris 72855	963-6600
FP	Roberts, William J	Post Office Box 110, Booneville 72927	675-2455
FP	Smith, James T	Post Office Box 286, Paris 72855	963-2191
GP	Ulrich, Guy	Post Office Box 626, Paris 72855	963-6181
FP	Williams, John R	Post Office Box 110, Booneville 72927	675-2455

LONOKE COUNTY

FP	Abrams, Joe A	Post Office Box 993, Cabot 72023	843-6528
FP	Anderson, Leslie F	1310 North Center, Lonoke 72086	676-5123
FP	Braswell, Thomas R	Post Office Box 130, England 72046	842-2597
FP	Camp, Arthur W	Post Office Box 547, Hazen 72064	255-3321
FP	Gartman, Joseph F	Post Office Box 450, Carlisle 72024	552-3211
GP	Harris, Willie R	Post Office Box 40, England 72046	842-2553
GP	Holmes, B. E.	305 West Front, Lonoke 72086	676-6560
FP	Inman, Fred C., Jr	Post Office Box K, Carlisle 72024	552-7575
OM	Kimsey, Warren H	Remington Arms Company, Lonoke 72086	676-3161
GP	Schumann, Gerald M	Post Office Box 1001, Des Arc 72040	256-4312
GP	Washburn, C Yulan	Route 1, Box 877, Ward 72176 (Res.)	843-3335

MILLER COUNTY

R	Andrews, A. E., Jr	1311 Rio Grande, Texarkana 75503 (Res.)	774-2121
GS	Barnes, Walter C., Jr	300 East Sixth, Texarkana 75502	774-3211
NEP	Blankenship, D Michael	422 Beech, Texarkana 75502	773-1111
PD	Burnett, James W	414 Hazel, Texarkana 75502	774-7301
PD	Burns, Billy R	Post Office Box 1409, Texarkana 75504	214-792-7151
PD	Burroughs, James C.	300 East Sixth, Texarkana 75502	774-3211
FP	DeFazio, John V., Jr	300 East Sixth, Texarkana 75502	774-3211
PD	Deskin, Roy L.	300 East Sixth, Texarkana 75502	774-3211
FP	Dildy, Edwin V., Jr	Post Office Box 1409, Texarkana 75504	214-792-7151
OBG	Dodge, John M	1201 Main, Texarkana 75501	214-794-3488
OBG	Druff, Gerald H	300 East Sixth, Texarkana 75502	774-3211
GS	Duncan, Donald L	300 East Sixth, Texarkana 75502	774-3211
OPH	Ellison, E. T., Jr	Post Office Box 1409, Texarkana 75503	214-792-7151
A	Fournier, Donald C.	2435 College Drive, #5, Texarkana 75504	214-793-3161
RD	Goesl, Andrew G	3800 Texas Boulevard, Texarkana 75503 (Res.)	214-794-5610
ORS	Green, Barry M.	1423 Main, Texarkana 75501	214-794-3661
OBG	Hall, Eric E.	Post Office Box 1409, Texarkana 75504	214-792-7151
PD	Hall, Jon D	300 East Sixth, Texarkana 75502	774-3211
GYN	Harrell, William B, Jr	Post Office Box 2078, Texarkana 75501	214-794-8328
FP	Harris, C. Lynn	Post Office Box 1409, Texarkana 75504	214-792-7151
OBG	Harrison, Jack W	300 East Sixth, Texarkana 75502	774-3211
GYN	Harrison, James W	300 East Sixth, Texarkana 75502	774-3211
GS	Hillis, Thomas M	Post Office Box 1409, Texarkana 75504	792-7151
GE	Hughes, A Keith	300 East Sixth, Texarkana 75502	774-3211
RD	Hughes, R Paul	3935 Texas Boulevard, Texarkana 75503 (Res.)	214-793-3385

Type of Practice	Member's Name	Address	Telephone Number
IM	Hutcheson, Fred A., Jr	300 East Sixth, Texarkana 75502	774-3211
R	Jean, Alan B	Post Office Box 689, Texarkana 75504	832-7246
GYN	Jones, John W	300 East Sixth, Texarkana 75502	774-3211
PTH	Joyce, Frederick E	Post Office Box 2763, Texarkana 75504	774-2121
GS	Kemp, Karlton H	408 Hazel, Texarkana 75502	774-5181
FP	Kittrell, James B	1001 Main, Texarkana 75501	214-794-6107
RD	Laws, J K	Post Office Box 1378, Texarkana 75504 (Res.)	772-1209
R	Leavelle, Ray W	Post Office Box 689, Texarkana 75504	774-2121
D	Loe, Arlis W	2435 College Drive, Texarkana 75501	214-792-7222
R	McGinnis, Robert S., Sr	Post Office Box 1409, Texarkana 75504	214-792-7151
PD	Meredith, Paul D	Post Office Box 1409, Texarkana 75504	214-792-7151
OPH	Newton, Norris L	Post Office Box 2830, Texarkana 75504	214-792-8541
CD	Osborn, Roger C., Jr	Post Office Box 1409, Texarkana 75504	214-792-7151
R	Peebles, Larry M	Post Office Box 689, Texarkana 75504	214-794-4756
U	Rountree, Glen A	300 East Sixth, Texarkana 75502	774-3211
R	Royal, Jack L.	300 East Sixth, Texarkana 75502	774-3211
OTO	Shipp, G Carl	Post Office Box 5845, Texarkana 75505	214-793-0691
FP	Short, Harold H	1400 College Drive, Texarkana 75503	214-793-5671
GS	Smith, Arnett D., Jr	Post Office Box 1409, Texarkana 75504	214-792-7151
GS	Solomon, J Alan	Post Office Box 1409, Texarkana 75504	214-792-7151
U	Somerville, Patrick J	Post Office Box 1409, Texarkana 75504	214-792-7151
FP	Stringfellow, Jerry B	1205 East 35th, Texarkana 75502	773-6745
OPH	Thornton, Charles N	Post Office Box 1409, Texarkana 75504	214-792-7151
GS	Tompkins, W C., Jr	300 East Sixth, Texarkana 75502	774-3211
	Wilhelm, Frieda	Dallas, Texas	
GS	Wren, Herbert B	Post Office Box 1409, Texarkana 75504	214-792-7151
CDS	Wright, James O., III	Post Office Box 3166, Texarkana 75504	214-792-3577
RD	Yarbrough, Charles P	Route 8, Box 573, Texarkana 75503 (Res.)	214-794-4744
GS	Young, Mitchell	1406 College Drive, Texarkana 75503	214-792-8264

MISSISSIPPI COUNTY

R	Allen, Anton M	Post Office Box 108, Blytheville 72316	762-3341
OPH	Aviner, Zvi	10th and Highland, Suite F, Blytheville 72315	763-2648
OBG	Bell, Mary C.	527 North Sixth, Blytheville 72315	763-8890
FP	Biggerstaff, Jerry R	608 West Lee, Osceola 72370	563-3576
IM	Brock, Charles C., Jr.	605 North Second, Blytheville 72315	763-1520
U	Campbell, Charles E., Jr	609 Fulton, Blytheville 72315	763-0855
R	Clewans, Harvey W	Post Office Box 108, Blytheville 72316	762-3341
FP	Cole, C R	519 North Sixth, Blytheville 72315	763-1554
FP	Cullom, Sumner R	700 West Keiser, Osceola 72370	563-6512
FP	Elliott, John O	Post Office Box 747, Blytheville 72316	763-4548
GP	Fairley, Eldon	Post Office Box 68, Osceola 72370	563-6568
GP	Fenaughty, Francis J	602 West Union, Osceola 72370	563-3552
GS	Fergus, R. Scott	Post Office Box 486, Osceola 72370	563-3248
GP	Flannigan, Thomas C.	225 West Concord, Box 1235, Manila 72442	561-3838
R	Friedman, Charles M.	Post Office Box 108, Blytheville 72316	762-3341
PTH	Hart, Sybil R	Post Office Box 312, Blytheville 72316	762-3346
ORS	Higley, George B., Jr	10th and Highland, Blytheville 72315	763-3116
GP	Holcomb, Cecil E.	511 North Sixth, Blytheville 72315	763-3922
IM	Holzner, Charles M	10th and Highland, Blytheville 72315	762-5360
PD	Hovious, John R., III	515 North Sixth, Blytheville 72315	763-5492
RD	Hubener, Louis F.	1717 Northwest 23rd Boulevard, #4-C, Gainesville, Florida 32605	904-372-2488
IM	Hudson, James H	602 West Union, Osceola 72370	563-6504
PTH	Husted, G Scott	Post Office Box 108, Blytheville 72316	762-3345
IM	Jones, Herbert	Post Office Box 321, Blytheville 72316	763-8032
IM	Jones, Joseph V	605 North Second, Blytheville 72315	763-1520
RD	Massey, L. D	4367 East Mallory, Memphis, Tennessee 38117 (Res.)	901-761-9057
OBG	Melton, C G	10th and Highland, Suite J, Blytheville 72315	763-4251
FP	Osborne, Merrill J	10th and Highland, Suite C, Blytheville 72315	762-5360
IM	Oster, Catherine J.	602 West Union, Suite A, Osceola 72370	563-6488
GP	Pollock, George D	608 West Lee, Osceola 72370	563-3576
OBG	Rauls, Stephen R.	10th and Highland, Suite H, Blytheville 72315	762-1030
GP	Rhodes, R F	608 West Lee, Osceola 72370	563-3576
GP	Rodman, T N	Post Office Box 260, Leachville 72438	539-6337
FP	Russell, James D	10th and Highland, Suite D, Blytheville 72315	762-5360
GS	Sellers, Kenneth D	10th and Highland, Suite E, Blytheville 72315	763-1307
FP	Shaneyfelt, E. A.	Post Office Box 630, Manila 72442	561-4421
GS	Sims, Hunter C., Jr	525 North Tenth, Blytheville 72315	763-0521
FP	Smith, Ronald D	620 West Walnut, Blytheville 72315	763-4541
OPH	Webb, Jack J	Post Office Box 547, Blytheville 72316	762-2131
OBG	Workman, W Wayne	527 North Sixth, Blytheville 72315	763-8890

MONROE COUNTY

FP	David, N C., Jr	108 West Ash, Brinkley 72021	734-2212
GP	Miya, Robert T	106 North New York, Brinkley 72021	734-4847
FP	Pham, Dac Tat	120 South Main, Brinkley 72021	734-3222
GP	Pupsta, Benedict F.	Post Office Box 250, Clarendon 72029	747-3321
GP	Stone, Herd E., Jr.	Post Office Box A, Holly Grove 72069	462-3393
GP	Walker, Walter L.	114 South New Orleans, Brinkley 72021	734-3242

NEVADA COUNTY

GP	Avery, Charles D	427 East 6th, Prescott 71857	887-2625
GS	Corbell, Carroll E.	Post Office Box 582, Prescott 71857	887-6687
GP	Crow, H. Blake	327 East 2nd South, Prescott 71857	887-3846
RD	Hairston, Glenn G	327 East 3rd South, Prescott 71857 (Res.)	887-2155
GP	Peeples, George R	305 East Main, Gurdon 71743	353-4422
FP	Portis, Richard P	Post Office Box 442, Prescott 71857	887-6651

OUACHITA COUNTY

FP	Braden, Lawrence F.	415 Hospital Drive, Camden 71701	836-5852
IM	Dedman, J L., Jr	415 Hospital Drive, Camden 71701	836-5013
FP	Dedman, William D	415 Hospital Drive, Camden 71701	836-5013
FP	Dobson, Jack T	209 North Blake, Pine Bluff 71601	536-6600
GS	Fohn, Charles H	415 Hospital Drive, Camden 71701	836-5013
GP	Guthrie, James	Post Office Box 757, Camden 71701	836-8101
FP	Hout, Judson N	Post Office Box 757, Camden 71701	836-8101
RD	Jameson, J. B., Jr	Post Office Box 994, Camden 71701 (Res.)	836-6486
FP	Kendall, Jerry R	Post Office Box 757, Camden 71701	836-8101
GP	Miller, John H	Post Office Box 851, Hampton 71744	798-4290
FP	Nunnally, Robert H.	Post Office Box 757, Camden 71701	836-8101
IM	Ozment, L V	Post Office Box 757, Camden 71701	836-8101
FP	Sanders, Cal R	Post Office Box 757, Camden 71701	836-8101
R	Thorne, Arthur E.	Post Office Box 797, Camden 71701	836-1221

Type of Practice	Member's Name	Address	Telephone Number
		PHILLIPS COUNTY	
GP	Barrow, John H	614 Oakland, Helena 72342	338-8622
FP	Bell, L J. Patrick	626 Poplar, Helena 72342	338-8163
OPH	Berger, Alfred A	801 Perry, Helena 72342	338-8781
#	Capes, Bernard	West Helena	
FP	Ellis, William A., Jr	603 Porter, Helena 72342	338-3037
GS	Elovitz, Maurice J.	Post Office Box 808, Helena 72342	338-7218
GP	Faulkner, Henry N	513 Porter, Helena 72342	338-7401
GP	Kirkman, C. M. T.	1105 Perry, Helena 72342	338-6542
GP	McCarty, C. P.	513 Porter, Helena 72342	338-7401
GP	McCarty, Gordon E., Jr	107 Hickory Hill, Helena 72342	338-8377
GP	McDaniel, Marion A	Post Office Box 769, Helena 72342	338-8308
GER	Miller, Robert D., Jr	616 Elm, Helena 72342	338-8531
GP	Paine, William T	661 Oakland, Helena 72342	572-6413
PTH	Patton, Francis M.	Post Office Box 511, Helena 72342	338-6411, Ext 350
	Pham, Anh N	Century, Florida	
PD	Rangaswami, N	Post Office Box 805, Helena 72342	338-7494
AN	Vasudevan, Kanaka	Post Office Box 510, Helena 72342	338-3917
U	Vasudevan, P.	Post Office Box 510, Helena 72342	338-6749
GP	Wise, James E., Jr.	Post Office Box 66, Marvell 72366	829-2386
		POLK COUNTY	
FP	Fried, David D.	Route 3, Box 194, Mena 71953	394-5880
IM	George, Anthony D.	600 North Morrow, Mena 71953	394-2200
GP	McClard, Helen	Post Office Box 655, Mount Ida 71957	867-2105
#	Redman, Pierre P.	Mena	
GP	Rogers, Henry N	600 West 7th, Mena 71953	394-3344
RD	Wood, John P	1107 Reine, Mena 71953 (Res.)	394-3223
		POPE COUNTY	
FP	Ashcraft, Ted E.	Post Office Box 1648, Russellville 72801	968-7170
GP	Audibert, Jeff M.	Post Office Box 187, Atkins 72823	641-2992
OTO	Austin, Nathan F.	106 South Inglewood, Russellville 72801	968-5261
GS	Bachman, David S.	3105 West Main Place, Russellville 72801	968-2345
FP	Barton, A. Dale	1207 North Church, Atkins 72823	641-2255
OBG	Battles, Larry D.	200 North Ouanah, Russellville 72801	968-1011
U	Bell, Robert A	2301 West Main, Russellville 72801	968-3323
IM	Berner, Dennis W	3105 West Main Place, Russellville 72801	968-2345
AN	Birum, Patricia J.	Post Office Box 785, Russellville 72801	968-5670
PD	Bost, R. Kingsley	3105 West Main Place, Russellville 72801	968-2345
FP	Bradley, Stanley C.	3105 West Main Place, Russellville 72801	968-2345
U	Brown, Charles H.	2501 West Main, Russellville 72801	968-8765
R	Burgess, James G.	Post Office Box 1647, Russellville 72801	968-7930
FP	Carter, James M.	3105 West Main Place, Russellville 72801	968-2345
GS	Crumpler, Joe B., Jr.	3105 West Main Place, Russellville 72801	968-2345
OBG	Dunn, Donald L.	200 North Ouanah, Russellville 72801	968-1011
D	Galloway, William W	1602 West Main, Russellville 72801	968-6969
CD	Henry, D. Andrew	3105 West Main Place, Russellville 72801	968-2345
FP	Henry, J. Arnold	3105 West Main Place, Russellville 72801	968-2345
IM	Hill, Donald F.	3105 West Main Place, Russellville 72801	968-2345
ORS	Honghiran, Ted	2504 West Main, Suite A, Russellville 72801	968-3200
GP	Kimball, G. Howard	1919 West Main, Russellville 72801	968-3611
R	King, John W	Post Office Box 1647, Russellville 72801	968-7930
RD	King, W. Ernest, Jr.	140 South Laredo, Russellville 72801 (Res.)	968-1118
ORS	Kolb, James M., Jr	305 Skyline Drive, Russellville 72801	968-2124
OBG	Lahr, Charles H.	3105 West Main Place, Russellville 72801	968-2345
FP	Lane, Walter H., Jr.	Post Office Box 324, Dover 72837	331-2828
OPH	Lawrence, Frank M.	Post Office Box 1107, Russellville 72801	968-7302
OPH	Lovell, Richard K., Sr.	2210 West Main Street, Russellville 72801	968-8940
FP	Lowrey, Douglas H.	Post Office Box 1598, Russellville 72801	968-2156
OPH	Lyford, Joe H., Jr	Post Office Box 1107, Russellville 72801	968-7302
GP	Malone, George E.	Post Office Box 187, Atkins 72823	641-2992
FP	Mauch, E. Jane	3105 West Main Place, Russellville 72801	968-2345
ORS	May, Robert H., Jr.	305 Skyline Drive, Russellville 72801	968-7711
FP	Meyer, Kelly H	2504 West Main, Suite H, Russellville 72801	968-3640
OPH	Mobley, Max J	Post Office Box 1107, Russellville 72801	968-7302
GS	Myers, J. Mark	3105 West Main Place, Russellville 72801	968-2345
FP	New, Kenneth O	3105 West Main Place, Russellville 72801	968-2345
OBG	Riddell, C. Michael	3105 West Main Place, Russellville 72801	968-2345
R	Riley, Don C.	Post Office Box 1647, Russellville 72801	968-7930
PTH	Stolz, Gerald A., Jr	Post Office Box 925, Russellville 72801	968-6781
FP	Teeter, Stanley D	3105 West Main Place, Russellville 72801	968-2345
IM	Thurlby, W. Robert	3105 West Main Place, Russellville 72801	968-2345
FP	Turner, Finley P., II	Post Office Box 1598, Russellville 72801	968-2156
IM	Wilkins, Charles F., Jr	3105 West Main Place, Russellville 72801	968-2345
GP	Williams, David M	Post Office Box 1598, Russellville 72801	968-2156
EM	Young, Sandra S	1800 West Main, Russellville 72801	968-2841
		PULASKI COUNTY	
RD	Abbott, William W	1204 Biscayne Drive, Little Rock 72207 (Res.)	225-2882
IM	Abraham, James H.	10001 Lile Drive, Little Rock 72205	227-8000
NS	Adametz, John H	750 Medical Towers Building, Little Rock 72205	225-0880
PUD	Adamson, James S	890 Medical Towers Building, Little Rock 72205	224-0110
OPH	Alford, T. Dale	5700 West Markham, Little Rock 72205	664-5100
OBG	Allen, D. B., Jr	500 South University, Suite 414, Little Rock 72205	664-4131
OBG	Allen, E. Stewert	1100 North University, Little Rock 72207	664-9191
PS	Allen, Thomas H	413 North University, Little Rock 72205	664-0900
OBG	Alston, Phillip R	2000 Fendley Drive, #101, North Little Rock 72114	758-9251
ONC	Amir, Jacob	10001 Lile Drive, Little Rock 72205	227-8000
ADM	Anderson, J. Roland	6209 West 12th, Little Rock 72204	663-6638
AN	Angeles, Jana S.	1024 North University, Little Rock 72207	663-0158
PTH	Araoz, Carlos A.	#1 St. Vincent Circle, #220, Little Rock 72205	660-2941
OM	Armstrong, Howard M.	340 Doctors Park Building, Little Rock 72205	227-7888
ORS	Aronson, James	804 Wolfe, Little Rock 72201	370-1467
PD	Arrington, Robert W	804 Wolfe, Little Rock 72201	370-1030
AN	Ashcraft, Keith E.	500 South University, Suite 720, Little Rock 72205	661-4180
RD	Ault, Charles C.	3 Helen Drive, Sherwood 72116 (Res.)	835-1046
PD	Austin, R. Lee	1110 West Main, Jacksonville 72076	985-1566
RD	Autry, Daniel H	1900 North Tyler, Little Rock 72207 (Res.)	664-2332
GS	Baber, John C., Jr	500 South University, Little Rock 72205	664-2434
GE	Baber, John T.	500 South University, Suite 716, Little Rock 72205	663-9420
P	Backus, Joe T	21 Bridgeway Road, North Little Rock 72118	771-4570
OT	Bailey, H. A. Ted, Jr.	1200 Medical Towers Building, Little Rock 72205	227-5050
PTH	Baker, Glen F.	4301 West Markham, Slot 600, Little Rock 72201	661-5603
U	Baker, Johnson J	500 South University, Suite 512, Little Rock 72205	664-4364
IM	Baker, Susan W	11215 Hermitage Road, #100, Little Rock 72211	225-2661
PD	Baldwin, Deane G	500 South University, Little Rock 72205	664-4044

Type of Practice	Member's Name	Address	Telephone Number
OBG	Baldwin, Maxwell R	880 Medical Towers Building, Little Rock 72205	224-5050
FP	Ballard, Clarence E , Jr	4202 South University, Little Rock 72204	562-4838
GYN	Barclay, David L	500 South University, Suite 614, Little Rock 72205	664-8502
GYN	Bard, David S	4301 West Markham, Slot 518, Little Rock 72201	661-5923
FP	Barg, Charles D	9600 Lile Drive, Little Rock 72205	224-5220
CD	Barlow, Brian E	#5 St Vincent Circle, Little Rock 72205	664-5860
CDS	Barnes, Robert W	4301 West Markham, Slot 520, Little Rock 72201	661-5610
ORS	Barnett, David C	110 Doctors Park Building, Little Rock 72205	227-4150
U	Barnett, Troy F	#1 St Vincent Circle, #320, Little Rock 72205	664-1762
R	Barnhard, Howard J	4301 West Markham, Slot 556, Little Rock 72201	661-5740
FP	Barron, Edwin N , Jr	10121 Rodney Parham Road, Little Rock 72207	225-9222
GYN	Batres, Francisco	500 South University, Suite 318, Little Rock 72205	663-5858
GS	Bauer, Frank M	500 South University, Suite 701, Little Rock 72205	664-2245
CD	Bauman, David C	#5 St. Vincent Circle, Little Rock 72205	664-5860
CD	Baxley, Paul J	407 Virginia Drive, Batesville 72501	793-5900
FP	Bay, Kevin D	1308 East Kiehl Avenue, Sherwood 72116	835-0703
R	Bearden, James R	1100 Medical Towers Building, Little Rock 72205	227-5240
PUD	Beaton, J Neal	10001 Lile Drive, Little Rock 72205	227-8000
OPH	Becquet, Norbert J	115 West 6th, Little Rock 72201	375-4419
PD	Becton, David	804 Wolfe, Little Rock 72201	370-1497
FP	Belknap, Melvin L	1801 Maple, North Little Rock 72114	758-1002
RD	Bennett, Eaton W	1003 Loretta Lane, Little Rock 72207 (Res.)	225-2478
CD	Bennett, F Anthony, Jr	#1 Financial Centre, Suite 241, Little Rock 72211	224-9001
GS	Berry, Frederick B	1060 Medical Towers Building, Little Rock 72205	224-3424
OPH	Berry, Robert L	1000 Medical Towers Building, Little Rock 72205	227-6980
FP	Betton, Harold B	1505 West 11th, Little Rock 72202	376-1160
GS	Bevans, David W , Jr	406 West Pershing, North Little Rock 72114	758-1620
R	Binet, Eugene F	4300 West 7th, Little Rock 72205	660-2009
D	Biondo, Raymond V	Post Office Box 921, North Little Rock 72115	758-2588
CD	Bishop, William B	10001 Lile Drive, Little Rock 72205	227-8000
RD	Black, H Thurston	10 Armistead Road, Little Rock 72207 (Res)	664-4759
U	Black, Hal R , Jr	200 Doctors Park Building, Little Rock 72205	225-9755
GE	Blackshear, Jack L , Jr	650 Medical Towers Building, Little Rock 72205	227-8074
ORS	Blankenship, William F	1100 North University, Suite 47, Little Rock 72207	664-5720
PD	Boellner, Samuel W	8924 Kanis Road, Little Rock 72205	227-4750
CD	Boger, James E	Post Office Box 5600, Little Rock 72215	227-7596
NS	Boop, Warren C., Jr.	4301 West Markham, Slot 507, Little Rock 72201	661-5270
N	Bornhofen, John H	8924 Kanis Road, Little Rock 72205	227-4750
PD	Bost, Roger B	804 Wolfe, Little Rock 72201	370-1001
NM	Boyd, Charles M	4301 West Markham, Slot 581, Little Rock 72201	661-5760
U	Bradburn, Curry B , Jr	200 Doctors Park Building, Little Rock 72205	225-9755
OPH	Brainard, Jay O	#5 St. Vincent Circle, #101, Little Rock 72205	664-5354
R	Brenner, George H , Jr	1100 Medical Towers Building, Little Rock 72205	771-3350
D	Bressinck, Renie E	950 Medical Towers Building, Little Rock 72205	227-8422
#	Briggs, Barnett P	Little Rock	
IM	Brinkley, Roy A	220 Doctors Park Building, Little Rock 72205	227-6350
OTO	Brizzolara, A J	500 South University, Suite 206, Little Rock 72205	664-4381
P	Broach, R Fred	21 Bridgeway Road, North Little Rock 72118	771-4570
#	Brown, Martha M	Little Rock	
GE	Browning, Donald G	409 North University, Little Rock 72205	664-6980
AN	Browning, Stanley K	9601 Lile Drive, Plaza A, Little Rock 72205	227-9114
	Bruce, Thomas A	Battle Creek, Michigan	
RD	Buchanan, Francis R	44 Pine Manor, Little Rock 72207 (Res)	664-6557
PD	Buchanan, Gilbert A	500 South University, Suite 200, Little Rock 72205	664-4117
GS	Buchman, Joseph A	500 South University, Suite 508, Little Rock 72205	664-9116
GS	Buchman, Joseph K	500 South University, Suite 508, Little Rock 72205	664-9116
ONC	Bucolo, Anthony P	1000 North University, Suite 100, Little Rock 72207	661-0060
FP	Buford, Joe L	1801 Maple, North Little Rock 72114	758-1002
AN	Bumpas, Joe H	500 South University, Suite 505, Little Rock 72205	664-4532
GS	Burnett, Hugh F	990 Medical Towers Building, Little Rock 72205	227-9080
FP	Burnham, William W	2208 North Cleveland, Little Rock 72207 (Res.)	661-9581
GP	Burrow, Dennis R	550 Edgewood, Maumelle 72118	851-2170
RD	Byrd, Lucas M., Jr	36 Lakeshore Drive, Little Rock 72204 (Res)	565-6046
#	Cadwallader, Chester S , III	Little Rock	
OPH	Calcote, Robert A	3629 McCain Boulevard, North Little Rock 72116	771-1166
GS	Caldwell, Fred T , Jr	4301 West Markham, Slot 520, Little Rock 72201	661-5509
FP	Calhoon, J Dale	#2 Crestview Plaza, Jacksonville 72076	982-4551
R	Calhoun, Joseph D	500 South University, Little Rock 72205	664-3914
FP	Calhoun, Richard A	330 Doctors Park Building, Little Rock 72205	227-6363
TS	Campbell, Gilbert S	4301 West Markham, Slot 520, Little Rock 72201	661-6177
R	Campbell, James W	500 South University, Little Rock 72205	664-3914
A	Caplinger, Kelsy J., III	11215 Hermitage Road, #104, Little Rock 72211	224-1156
RD	Carnahan, Robert G	12660 Rivercrest Drive, Little Rock 72212 (Res)	224-2274
GP	Carson, Layne E	4300 West 7th, Little Rock 72205	660-2021
FP	Carter, Jerry L	12361 Hinson Road, Little Rock 72212	224-2875
R	Caruthers, Samuel B., Jr	1100 Medical Towers Building, Little Rock 72205	227-2180
CDS	Casali, Robert E	200 Medical Towers Building, Little Rock 72205	224-5666
FP	Casper, Robert B	4202 South University, Little Rock 72204	562-4838
RD	Cazort, Alan G	5117 Edgewood, Little Rock 72207 (Res)	663-3623
ORS	Chakales, Harold H	#5 St. Vincent Circle, #300, Little Rock 72205	664-1500
P	Chambers, Donald S	#1 St. Vincent Circle, #140, Little Rock 72205	663-4337
OPH	Chandler, Billy M	406 West Pershing, North Little Rock 72114	758-1651
FP	Chapman, Jerry C	Post Office Box M, Cabot 72023	843-6585
OPH	Chappell, Carol W	#5 St. Vincent Circle, Suite 400, Little Rock 72205	661-1123
FP	Chearis, David B	330 Doctors Park Building, Little Rock 72205	227-6363
AN	Chearis, John T	9601 Lile Drive, Plaza A, Little Rock 72205	227-9114
R	Chisholm, Dan P	500 South University, Little Rock 72205	664-3914
PD	Choate, Robert B	516 West Pershing, North Little Rock 72114	758-1530
RD	Christeson, William W	7 Sunset Circle, Little Rock 72207 (Res.)	666-0566
RD	Christian, John D	101 Shamrock Drive, Little Rock 72205 (Res)	664-7742
FP	Chudy, Amail	1801 Maple, North Little Rock 72114	758-1002
FP	Church, B L	Post Office Box 246, North Little Rock 72115	753-3130
GYN	Church, Marion M	410 West Pershing, North Little Rock 72114	758-1022
AN	Clark, Richard B	4301 West Markham, Slot 515, Little Rock 72201	661-5491
GE	Clift, Steven A	2000 Fendley Drive, North Little Rock 72114	758-2041
OPH	Clifton, Cliff	516 Scott, Little Rock 72201	374-6338
FP	Cobb, Jock S	North Hills Family Clinic, Sherwood 72116	835-7238
R	Cockrill, H Howard, Jr.	500 South University, Little Rock 72205	664-3914
OTO	Colclasure, Joe B	1200 Medical Towers Building, Little Rock 72205	227-5050
OS	Cone, Michael J	340 Medical Towers Building, Little Rock 72205	225-8821
RD	Cook, Raymond C	5500 Sherwood, Little Rock 72207 (Res)	663-1550
P	Cooper, Ruth Anne	5726 Stonewall Road, Little Rock 72207 (Res)	664-9800
OBG	Cornell, Paul J	500 South University, Little Rock 72205	664-2277
OS	Cornett, James K	300 South Rodney Parham, #14, Little Rock 72205	225-5332
OPH	Cosgrove, K. W., Jr	630 Medical Towers Building, Little Rock 72205	224-0400
RD	Craig, Marion S., Jr	300 Beckwood Road, Little Rock 72205 (Res)	666-6775
GYN	Crews, J. Travis	500 South University, Suite 815, Little Rock 72205	664-8505

Type of Practice	Member's Name	Address	Telephone Number
CRS	Crocker, Charles H	500 South University, Suite 212, Little Rock 72205	664-1272
OPH	Cross, J. B.	500 South University, Little Rock 72205	666-0126
ORS	Crow, Joe W	2003 Fendley Drive, North Little Rock 72114	771-1600
CDS	Crow, R Lewis, Jr	600 Medical Towers Building, Little Rock 72205	227-9434
R	Dalrymple, Glenn V	1100 Medical Towers Building, Little Rock 72205	227-5240
FP	Daugherty, Joe D	Post Office Box 336, Jacksonville 72076	982-0576
FP	Daugherty, John L	Post Office Box 336, Jacksonville 72076	982-0576
AN	Dean, David M	9601 Lile Drive, Plaza A, Little Rock 72205	227-9114
RD	Dean, Gilbert O	220 Ridgeway, Little Rock 72205 (Res.)	663-0668
OPH	Deer, Philip J., Jr.	8500 West Markham, Little Rock 72205	224-4701
PD	Dennis, James L.	804 Wolfe, Little Rock 72201	370-1830
N	Denson, William D	2003 Fendley Drive, North Little Rock 72114	753-5462
OBG	DesLauriers, S Killeen	880 Medical Towers Building, Little Rock 72205	224-5050
OT	Dickins, John R E	1200 Medical Towers Building, Little Rock 72205	227-5050
NS	Dickins, Robert D., Jr	750 Medical Towers Building, Little Rock 72205	225-0880
ORS	Dickson, D Bud	#5 St Vincent Circle, #100, Little Rock 72205	663-4163
FP	Dillard, Daniel C	4202 South University, Little Rock 72204	562-4838
R	Diner, Wilma C	4301 West Markham, Slot 556, Little Rock 72201	661-5740
R	Dodd, Doyne	1100 Medical Towers Building, Little Rock 72205	227-2180
RD	Dodge, Eva F	Box 1681, Worthen Bank, Little Rock 72203 (Res)	NF
P	Douglas, Warren M	260 Medical Towers Building, Little Rock 72205	224-2447
U	Downs, Ralph A	#1 St Vincent Circle, #320, Little Rock 72205	664-1762
PDC	Dungan, William T	804 Wolfe, Little Rock 72201	378-0498
FP	Durham, James W	#2 Crestview Plaza, Jacksonville 72076	982-4551
D	Dwyer, Gregory A	500 South University, Suite 501, Little Rock 72205	664-4161
RD	Easley, Edgar J	220 Linwood Court, Little Rock 72205 (Res)	663-5086
ORS	Easter, Rex M	601 North University, Little Rock 72205	666-0144
AN	Edge, Otis H	500 South University, Little Rock 72205	664-8489
OTO	English, Jim L	300 Medical Towers Building, Little Rock 72205	227-4863
AN	Eyre, Byron L.	2800 Percy Machin Drive, North Little Rock 72114	758-4806
PD	Eyre, Linda B	500 South University, Little Rock 72205	664-4110
FP	Farmer, Joseph F	1225 Breckenridge, Little Rock 72205	225-2594
P	Farrell, Robert E.	11700 Rainwood, Little Rock 72212	771-4050
FP	Farris, Guy R , Jr	6213 Lee Avenue, Little Rock 72205	664-2115
GE	Fernandez, Agustin	2000 Fendley Drive, North Little Rock 72114	758-2041
R	Ferris, Ernest J.	4301 West Markham, Slot 556, Little Rock 72201	661-5747
FP	Fewell, Ronald D.	Post Office 459, Jacksonville 72076	982-2141
GS	Fielder, Charles R	406 West Pershing, North Little Rock 72114	758-1620
FP	Fields, Patrick R	National Old Line Bldg , #102, Little Rock 72201	375-3231
U	Finan, Barre F	200 Doctors Park Building, Little Rock 72205	225-9755
R	Fincher, Robert L.	1100 Medical Towers Building, Little Rock 72205	227-5240
U	Finkbeiner, Alex E.	4301 West Markham, Slot 540, Little Rock 72201	661-5240
A	Fiser, P Martin	Post Office Box 5675, Little Rock 72215	227-5210
PD	Fiser, Robert H., Jr	Post Office Box 5058, Little Rock 72225	371-9192
PH	Fitzhugh, A Stuart	4815 West Markham, Little Rock 72205	661-2242
FP	Flack, James V , Jr	424 North University, Little Rock 72205	664-4810
NS	Flanigan, Stevenson	4301 West Markham, Slot 507, Little Rock 72201	661-5270
**CDS	Fleisher, Homer L , III,	12810 Pleasant Forest Drive, Little Rock 72212 (Res.)	NF
RD	Fletcher, Elizabeth D	700 East 9th, #4-K, Little Rock 72202 (Res)	372-6902
NS	Fletcher, Thomas M.	500 South University, Suite 207, Little Rock 72205	664-3021
ONC	Flippin, Tony A	#1 St Vincent Circle, #450, Little Rock 72205	664-4820
IM	Florez, James P	#1 Lile Court, Suite 201, Little Rock 72205	224-6294
GYN	Floyd, Bill G	210 Doctors Park Building, Little Rock 72205	224-6770
U	Fraiser, Lacy P	200 Doctors Park Building, Little Rock 72205	225-9755
A	France, Gene L.	11215 Hermitage Road, #104, Little Rock 72211	224-1156
PD	Fraser, Eric A	516 West Pershing, North Little Rock 72114	758-1530
OBG	Fraser, James H , Jr	#1 Lile Court, Suite 101, Little Rock 72205	225-1485
OBG	Fuller, C. Dale	1924 Fendley Drive, North Little Rock 72114	758-3774
OPH	Fulmer, John M	5410 West Markham, Little Rock 72205	664-3142
N	Galbraith, Robert C	8924 Kanis Road, Little Rock 72205	227-4750
OTO	Gardner, Guy F	300 Medical Towers Building, Little Rock 72205	227-4863
PS	Gay, Ellery C., Jr	#2 Lile Court, Little Rock 72205	224-1044
R	Gettys, Joseph M , Jr	1100 Medical Towers Building, Little Rock 72205	227-5240
N	Gibson, Gordon L.	8924 Kanis Road, Little Rock 72205	227-4750
PUD	Giglia, Anthony R , III	1000 North University, Little Rock 72207	666-5311
NS	Giles, Wilbur M.	750 Medical Towers Building, Little Rock 72205	225-0880
GYN	Gillespie, A. Tharp	500 South University, Suite 712, Little Rock 72205	664-9555
AN	Glenn, Wayne B	500 South University, Little Rock 72205	664-4532
AN	Glidden, Michael L	500 South University, Suite 720, Little Rock 72205	664-8489
END	Glover, Lawson E., Jr	10001 Lile Drive, Little Rock 72205	227-8000
R	Glover, W Clyde	1100 Medical Towers Building, Little Rock 72205	227-2180
GS	Gocio, John C	4300 West 7th, Little Rock 72205	661-1202, Ext. 2038
IM	Golden, William E.	4301 West Markham, Slot 641, Little Rock 72201	661-5236
P	Good, Henry H	#1 St Vincent Circle, #340, Little Rock 72205	664-1060
A	Gordon, Vida H	804 Wolfe, Little Rock 72201	370-1202
PD	Gosser, Bob L	516 West Pershing, North Little Rock 72114	758-1530
	Goza, George M , Jr	Rice Lake, Wisconsin	
GS	Graham, G Grimsley	990 Medical Towers Building, Little Rock 72205	227-9080
RD	Gray, Edwin F.	11901 Fairway Drive, Little Rock 72212 (Res)	224-0220
OBG	Green, William O., III	1924 Fendley Drive, North Little Rock 72114	758-3774
GE	Greenway, C Don	409 North University, Little Rock 72205	664-6980
RD	Greutter, John E , Jr	614 North Ash, Little Rock 72205 (Res)	663-2072
ORS	Grimes, H Austin	Post Office Box 5270, Little Rock 72215	224-6900
RD	Growdon, James H.	17 Wingate, Little Rock 72205 (Res.)	225-2484
P	Guggenheim, Frederick G	4301 West Markham, Slot 589, Little Rock 72201	661-5483
D	Guin, Jere D	4301 West Markham, Slot 576, Little Rock 72201	661-5110
FP	Gustavus, John L.	2007 Fendley Drive, North Little Rock 72114	758-9350
GYN	Hagler, James L	500 South University, Little Rock 72205	664-5330
IM	Hall, A D	500 South University, Suite 306, Little Rock 72205	664-0027
U	Hall, A. David	500 South University, Suite 512, Little Rock 72205	664-4364
PD	Hall, R Whit	Post Office Box 5597, Little Rock 72215	227-6727
PUD	Hampton, John R.	5800 West 10th, #610, Little Rock 72204	661-9393
OPH	Hankins, Edwin, III	500 South University, Little Rock 72205	666-0311
OPH	Hardberger, R E	#1 St Vincent Circle, #120, Little Rock 72205	661-0450
GE	Hardin, Ronald D.	107 Medical Towers Building, Little Rock 72205	224-9100
AN	Harger, C. Harold	9601 Lile Drive, Plaza A, Little Rock 72205	227-9114
CD	Hargrove, Joe L.	5326 West Markham, #10, Little Rock 72205	664-0941
IM	Harper, Ernest H	400 West Pershing, North Little Rock 72114	758-2294
FP	Harper, Gary E.	123 Pearl, Little Rock 72205	375-3000
P	Harrendorf, Cagle	500 South University, Suite 320, Little Rock 72205	663-6346
TR	Harris, Donald R	Post Office Box 7509, Little Rock 72207	664-8573
P	Harris, T Stuart	21 Bridgeway Road, North Little Rock 72118	771-4570
R	Harris, William T	500 South University, Little Rock 72205	664-3914
P	Harrison, A Vale	930 Medical Towers Building, Little Rock 72205	225-7433
FP	Harrison, Roy E.	8824 Chicot Road, Little Rock 72209	562-8600
OBG	Harrison, William E	500 South University, Suite 711, Little Rock 72205	664-9232
P	Hawley, Harold B	11500 Rodney Parham Road, Little Rock 72212	225-3156

Type of Practice	Member's Name	Address	Telephone Number
GS	Hayden, William F	500 South University, Little Rock 72205	664-2434
PS	Hayes, J Harry, Jr.	#1 St Vincent Circle, #310, Little Rock 72205	666-2811
FP	Hayes, Richard L	#2 Crestview Plaza, Jacksonville 72076	982-4551
PUD	Hayes, Sidney P	890 Medical Towers Building, Little Rock 72205	224-0110
R	Haynes, W D	Post Office Box 5210, Little Rock 72215	664-8573
IM	Hazlewood, James B	11121 North Rodney Parham Road, Little Rock 72212	224-0794
U	Headstream, James W	500 South University, Little Rock 72205	664-4364
P	Hearnsberger, Henry G , Jr	4313 West Markham, Little Rock 72205	664-4500
A	Hedges, Harold H	424 North University, Little Rock 72205	664-4810
A	Hefley, Bill F	Post Office Box 5675, Little Rock 72215	227-5210
FP	Hendren, Michael C.	100 South 14th, Fort Smith 72901	785-2431
P	Henker, Fred O , III	4301 West Markham, Slot 506, Little Rock 72201	661-5266
OBG	Henry, C Reid, Jr	500 South University, Suite 702, Little Rock 72205	664-4191
RD	Henry, Charles R , Sr	#4 Armistead Road, Little Rock 72207 (Res)	663-0758
N	Henry, G Morrison	8924 Kanis Road, Little Rock 72205	227-4750
OPH	Henry, J Forrest, Jr.	516 Scott, Little Rock 72201	374-6338
OPH	Henry, Richard Y	312 West Pershing, North Little Rock 72114	758-7627
PD	Henry, Robert L , Jr	500 South University, Suite 302, Little Rock 72205	664-4044
R	Henry, William T.	1100 Medical Towers Building, Little Rock 72205	227-5240
IM	Herron, Jerry M	#1 Lile Court, Suite 201, Little Rock 72205	224-6294
RD	Herron, John T	2824 Foxcroft Road, #49, Little Rock 72207 (Res)	227-9484
AN	Hickey, Joseph P	6925 Kingwood Road, Little Rock 72207 (Res)	666-8865
CD	Hicks, David C	Post Office Box 5600, Little Rock 72215	227-7596
N	Higgins, Don C	4300 West 7th, Little Rock 72205	660-2070
AN	Hilt, Howell V	1200 North Main, Benton 72015	776-2681
FP	Hodges, J Timothy	500 South University, Suite 818, Little Rock 72205	663-3669
R	Hodges, Lindy M	1100 Medical Towers Building, Little Rock 72205	227-5240
TS	Hoffmann, Thomas H	200 Medical Towers Building, Little Rock 72205	224-5666
R	Holder, John C.	4301 West Markham, Slot 556, Little Rock 72201	661-5740
FP	Holland, Jay D	4601 Woodlawn, Little Rock 72205	664-0769
RD	Hollenberg, Henry G	#7 Longfellow Circle, Little Rock 72207 (Res.)	663-7767
#	Hollis, N T	Little Rock	
FP	Holmes, Harlan C	1160 Medical Towers Building, Little Rock 72205	225-6123
RD	Holt, L Gordon	5700 North Country Club, Little Rock 72207 (Res)	663-8907
RHU	Holt, Stephen D.	10001 Lile Drive, Little Rock 72205	227-8000
R	Holton, Jerry C.	500 South University, Suite 101, Little Rock 72205	664-3914
D	Horan, Douglas B	10001 Lile Drive, Little Rock 72205	227-8000
PTH	Hough, Aubrey J , Jr	4301 West Markham, Slot 517, Little Rock 72201	661-5170
P	Howard, John G , Jr	9601 Lile Drive, Suite 790, Little Rock 72205	227-6370
N	Howell, Coburn S , Jr.	8924 Kanis Road, Little Rock 72205	227-4750
OBG	Howell, Marsha T	5800 West 10th, #705, Little Rock 72204	666-5562
D	Hudson, Thomas F , III	601 North University, Little Rock 72205	664-6420
NEP	Hughes, Ronald D	500 South University, Suite 214, Little Rock 72205	664-9881
ORS	Hundley, John M	412 Cross, Little Rock 72201	375-5338
CD	Hundley, Randal F	360 Doctors Park Building, Little Rock 72205	224-6525
GS	Hunton, David W	Post Office Box 3528, Fort Smith 72913	452-2077
ORS	Hutson, Harold G	110 Doctors Park Building, Little Rock 72205	227-4150
IM	Jackson, J Presley	10001 Lile Drive, Little Rock 72205	227-8000
FP	Jackson, M A	1304 Wright Avenue, Little Rock 72206	374-7940
D	Jansen, G Thomas	500 South University, Suite 501, Little Rock 72205	664-4161
PD	Jefferson, Thomas T	Post Office Box 5597, Little Rock 72215	227-6727
OBG	Jelovsek, Frederick R	4301 West Markham, Slot 518, Little Rock 72201	661-5495
PTH	Jimenez, Jorge F	804 Wolfe, Little Rock 72201	370-1307
PTH	Johnson, B Richard	9601 Interstate 630, Little Rock 72205	227-2888
CD	Johnson, Ben D.	500 South University, Suite 318, Little Rock 72205	664-9535
IM	Johnson, Henry D	500 South University, Suite 319, Little Rock 72205	664-4171
ORS	Johnson, Philip H	Post Office Box 5270, Little Rock 72215	224-6900
R	Johnston, Dale E	500 South University, Little Rock 72205	664-3914
A	Johnston, Thomas G	P O Box 5000, Little Rock 72225	664-3904
AN	Jones, Garry L.	500 South University, Suite 720, Little Rock 72205	664-8489
GS	Jones, John C	500 South University, Suite 301, Little Rock 72205	664-4747
	Jones, John S	Dallas, Texas	
ORS	Jones, Kenneth G	Post Office Box 5270, Little Rock 72215	224-6900
GS	Jones, Robert D	500 South University, Suite 301, Little Rock 72205	664-4747
D	Jones, William N	500 South University, Suite 708, Little Rock 72205	664-0418
NS	Jordan, F. Richard	520 West Pershing, Suite A, North Little Rock 72114	753-5340
CD	Jordan, Randy A	Post Office Box 5600, Little Rock 72215	227-7596
NS	Jouett, W Ray	750 Medical Towers Building, Little Rock 72205	225-0880
R	Joyce, John W	1100 Medical Towers Building, Little Rock 72205	227-5240
AN	Kaemmerling, Raymond E	500 South University, Suite 720, Little Rock 72205	664-8489
IM	Kahn, Alfred, Jr	1300 West 6th, Little Rock 72201	374-5588
CD	Kane, James J	#5 St Vincent Circle, Little Rock 72205	664-5860
PD	Keathley, Susan A	Post Office Box 5597, Little Rock 72215	227-6727
D	Keeran, Michael G	500 South University, Little Rock 72205	664-4161
OBG	Keller, Al W	1924 Fendley Drive, North Little Rock 72114	758-3774
FP	Kennedy, Charles H.	3115 J F K Boulevard, North Little Rock 72116	753-9464
PD	Kennedy, H Frazier	500 South University, Suite 200, Little Rock 72205	664-4117
PD	Kletzel, Morris	804 Wolfe, Little Rock 72201	370-1495
R	King, Michael T	1100 Medical Towers Building, Little Rock 72205	227-5240
A	Kittler, Fred J.	Post Office Box 5675, Little Rock 72215	227-5210
CD	Kizziar, Jim C.	650 Shackleford Road, #241, Little Rock 72211	224-9001
R	Knox, Michael F	500 South University, Little Rock 72205	664-3914
P	Koehler, Thomas R	4313 West Markham, Little Rock 72205	664-4500
END	Kohler, Peter O	4301 West Markham, Slot 550, Little Rock 72201	661-5350
RD	Kolb, Agnes J.	30 Lenon Drive, Little Rock 72207 (Res)	663-7930
P	Kolb, W Payton	230 Medical Towers Building, Little Rock 72205	225-0887
RHU	Kovaleski, Thomas M	10001 Lile Drive, Little Rock 72205	227-8000
RD	Kozberg, Oscar	4 Windsor Court, Little Rock 72212 (Res.)	225-7709
GYN	Kreth, K M	417 North University, Little Rock 72205	663-9441
P	Krulin, Gregory S	#1 St Vincent Circle, #340, Little Rock 72205	664-1060
IM	Kulback, Steven J	Post Office Box 5457, Jacksonvile 72076	985-2537
CD	Kumpuris, Andrew G	415 North University, Little Rock 72205	664-6841
GS	Kumpuris, Frank G	415 North University, Little Rock 72205	664-1521
OBG	Kwee, James J.	#1 Lile Court, Suite 200, Little Rock 72205	224-5500
OTO	Kyser, James F	900 Medical Towers Building, Little Rock 72205	227-8501
R	Laakman, Robert W.	500 South University, Little Rock 72205	664-3915
OPH	Landers, James H	500 South University, Suite 519, Little Rock 72205	664-1104
R	Landgren, Robert C	Post Office Box 5210, Little Rock 72215	664-8573
R	Lane, John W	1100 Medical Towers Building, Little Rock 72205	227-5240
GS	Lang, Nicholas P.	4301 West Markham, Slot 520, Little Rock 72201	661-6186
ORS	Lange, Thomas A.	4301 West Markham, Slot 531, Little Rock 72201	661-5251
R	Langston, Harold D.	Post Office Box 56202, Little Rock 72215	664-8573
FP	Laurenzana, Donald A	3423 Pike, North Little Rock 72118	753-3661
RD	Lawson, Mason G	200 Ridgeway, Little Rock 72205 (Res)	663-4834
PS	Lehmberg, Robert W	11219 Hermitage Road, #200, Little Rock 72211	227-6063
EM	Leibovich, Marvin	9600 West 12th, Emer. Dept., Little Rock 72205	227-2300
OTO	Leipzig, Bruce	2001 Fendley Drive, North Little Rock 72114	758-2271

Type of Practice	Member's Name	Address	Telephone Number
GS	Lemle, Theodore L.	5800 West 10th, Suite 405, Little Rock 72204	661-1462
RHU	Leonard, Donald G	#1 St. Vincent Circle, #150, Little Rock 72205	664-2466
FP	Leonard, Garnett J	3115 J.F.K. Boulevard, North Little Rock 72116	753-9499
OBG	Leou, Frank J.	1070 Medical Towers Building, Little Rock 72205	224-1080
PM	Lepore, Diane G	12807 Kanis Road, Little Rock 72211	224-0005
PD	Levin, Frederick R.	500 South University, Little Rock 72205	664-4044
CD	Lewis, W. Sexton	700 Medical Towers Building, Little Rock 72205	227-4434
R	Lile, Henry A.	1100 Medical Towers Building, Little Rock 72205	227-5240
CDS	Lincoln, Ben M.	5326 West Markham, #18, Little Rock 72205	664-6705
ORS	Lipke, Jay M.	601 North University, Little Rock 72205	666-0144
CDS	Loebl, Edward C.	250 Medical Towers Building, Little Rock 72205	227-4787
U	Logan, Charles W	500 South University, Little Rock 72205	664-4364
IM	Love, Tommy L., Jr	#1 St. Vincent Circle, #350, Little Rock 72205	664-5932
PD	Lowe, Betty A	804 Wolfe, Little Rock 72201	380-1401
N	Lucy, Dennis D., Jr	4301 West Markham, Slot 500, Little Rock 72201	661-5135
GS	Ludwig, Frank R	406 West Pershing, North Little Rock 72114	758-1620
GS	Lyons, Virgle E., Jr	500 South University, Little Rock 72205	664-2434
PTH	Malak, F. A.	Post Office Box 5274, Little Rock 72215	227-5936
PD	Mallory, George B., Jr	804 Wolfe, Little Rock 72201	370-1018
#	Mallory, George L., Jr	North Little Rock	
AN	Mallory, John A.	9601 Lile Drive, Plaza A, Little Rock 72205	227-9114
PM	Maloney, F. Patrick	4301 West Markham, Slot 602, Little Rock 72201	661-5703
TR	Maners, Ann W.	Post Office Box 5210, Little Rock 72215	664-8573
FP	Mann, R. Jerry	6924 Geyer Springs Road, Little Rock 72209	562-1463
PTH	Markland, Gary S.	9601 Interstate 630, Exit 7, Little Rock 72205	225-2888
OBG	Marks, Stephen R.	2000 Fendley Drive, North Little Rock 72114	758-9251
IM	Martin, Rebecca Edge	2011 Fendley Drive, North Little Rock 72114	771-0300
CD	Martin, Richard H	360 Doctors Park Building, Little Rock 72205	224-6525
NS	Mason, J. Zachary	750 Medical Towers Building, Little Rock 72205	225-0880
PUD	Mason, William L.	610 Freeway Medical Towers, Little Rock 72204	661-9393
#	Massey, C. G.	Little Rock	
A	Matthews, Joseph W.	Post Office Box 5675, Little Rock 72215	227-5210
P	Matthews, Robert R.	4313 West Markham, Little Rock 72205	664-4500
OBG	Mattison, Donald R.	4301 West Markham, Slot 518, Little Rock 72201	661-5632
	Mawk, John R.	(Address unknown)	
R	McAdoo, Hosea W., Jr.	1100 Medical Towers Building, Little Rock 72205	227-5240
ORS	McCarthy, Richard E.	804 Wolfe, Little Rock 72201	370-1468
PTH	McConnell, John D.	500 South University, Suite 411, Little Rock 72205	664-2593
GS	McCracken, John D.	970 Medical Towers Building, Little Rock 72205	227-8180
FP	McCrary, George A.	#2 Crestview Plaza, Jacksonville 72076	982-4551
R	McDonald, James E.	500 South University, Little Rock 72205	664-3914
FP	McGowan, R. J., Jr.	424 North University, Little Rock 72205	664-4810
OTO	McGrew, Robert N.	1200 Medical Towers Building, Little Rock 72205	227-5050
OBG	McKelvey, K. David	500 South University, Suite 414, Little Rock 72205	664-4131
ORS	McKenzie, Charles N.	802 North University, Little Rock 72205	666-0251
PTH	McKinney, Carl N.	500 South University, Suite 411, Little Rock 72205	664-2593
OBG	McKnight, C. Allen	800 Medical Towers Building, Little Rock 72205	227-5885
RD	McMillin, F. Lamar, Sr.	337 Crystal Court, Little Rock 72205 (Res.)	663-3783
OPH	McNair, James R.	6911 Geyer Springs, Little Rock 72209	562-5637
CD	Meacham, Donald F.	#1 Financial Centre, #241, Little Rock 72211	224-9001
OM	Meador, A. Sharon	7709 Highway 107, Sherwood 72116	834-1902
AN	Means, Paul N.	10825 Financial Cntr. Pkwy., #201, Little Rock 72211	227-7590
ONC	Mendelsohn, Lawrence A.	#1 St. Vincent Circle, Suite 450, Little Rock 72205	664-4820
IM	Metrailer, James A.	1100 North University, Suite 125, Little Rock 72207	664-1540
N	Miles, David A.	500 South University, Suite 812, Little Rock 72205	664-3018
RD	Millard, Roy I.	14300 Rock Creek Pkwy., #2302, Little Rock 72211 (Res.)	224-9154
	Miller, C. Lindsey	Castine, Maine	
FP	Miller, Forrest B., Jr.	4202 South University, Little Rock 72204	562-4838
OBG	Miller, Frank C.	4301 West Markham, Slot 518, Little Rock 72201	661-5387
IM	Miller, Raymond P., Sr.	5918 Lee, Little Rock 72205	664-2500
OTO	Milner, E. L.	500 South University, Suite 208, Little Rock 72205	664-4318
ADM	Mitchell, George K.	Post Office Box 2181, Little Rock 72203	378-2133
N	Money, Wandal D.	2003 Fendley Drive, North Little Rock 72114	753-5462
D	Moore, Burton A.	500 South University, Little Rock 72205	664-4161
U	Moore, J. Malcolm, Jr.	500 South University, Suite 512, Little Rock 72205	664-4364
GS	Moore, Rex N.	Post Office Box 459, Jacksonville 72076	982-2141
IM	Moore, Robert B.	5918 Lee, Little Rock 72205	664-2500
GYN	Morgan, Frank E.	410 Pershing, North Little Rock 72114	758-1022
TS	Morris, W. Dale	405 North University, Little Rock 72205	664-4577
RD	Morris, Woodbridge E.	310 Ridgeway, Little Rock 72205 (Res.)	663-6551
FP	Morrison, Doyle H.	3807 McCain Park Drive, North Little Rock 72116	758-8981
R	Morrison, James R.	500 South University, Little Rock 72205	664-3914
IM	Morse, James C.	500 South University, Suite 402, Little Rock 72205	661-9740
GE	Morton, William J.	10001 Lile Drive, Little Rock 72205	227-8000
ORS	Mulhollan, James S.	#1 St. Vincent Circle, #410, Little Rock 72205	664-6334
RD	Murphy, James E., Jr.	7607 Ascension, Little Rock 72204 (Res.)	NF
P	Murphy, Randolph	708 West 2nd, Little Rock 72201	371-2214
#	Napper, George S.	North Little Rock	
CDS	Nash, John C.	330 Doctors Park Building, Little Rock 72205	227-6363
R	Nelson, Alvah J., III	Post Office Box 5210, Little Rock 72215	664-8573
ORS	Nelson, Carl L., Jr.	4301 West Markham, Slot 531, Little Rock 72201	661-5505
OS	Nestrud, Richard M.	340 Medical Towers Building, Little Rock 72205	225-8821
R	Newbern, David H.	500 South University, Little Rock 72205	664-3914
RD	Nisbett, James M.	517 East 7th, Little Rock 72202 (Res.)	375-2252
ORS	Nix, Richard A.	Post Office Box 5270, Little Rock 72215	224-6900
FP	Nolen, James E.	Post Office Box 459, Jacksonville 72076	982-2141
R	Norton, George A.	500 South University, Suite 108, Little Rock 72205	664-3914
RD	Norton, Joseph A.	8570 Cantrell Road, Little Rock 72207 (Res.)	225-1860
PH	Oates, Gordon P.	1700 West 13th, Suite 300, Little Rock 72202	376-4511
IM	O'Brien, Mary E.	10001 Lile Drive, Little Rock 72205	227-8000
R	Oddson, Terrence A.	500 South University, Little Rock 72205	664-3914
GP	Ogden, M. D.	4601 Woodlawn, Little Rock 72205	664-0769
P	Oglesby, Walter R.	290 Valley Club Circle, Little Rock 72212 (Res.)	224-6426
ADM	O'Neal, Walter H.	9601 Interstate 630, Exit 7, Little Rock 72205	227-2672
GS	Osam, Patrick N.	320 Doctors Park Building, Little Rock 72205	227-7200
GS	Ozment, Kerry L.	5800 West 10th, Suite 710, Little Rock 72204	663-4020
ADM	Padberg, Frank T.	55 East Erie, Chicago, Illinois 60611	312-664-4094
ONC	Padilla, Fernando	#1 St. Vincent Circle, #160, Little Rock 72205	664-6601
AN	Panuska, Jerry	7 Piedmont Lane, Little Rock 72212 (Res.)	224-1930
OT	Pappas, James J.	1200 Medical Towers Building, Little Rock 72205	227-5050
OPH	Parker, J. Mayne	500 South University, Suite 119, Little Rock 72205	666-9632
GS	Parnell, Clifton L., III	405 North University, Little Rock 72205	664-4577
PD	Paulus, Thomas E.	500 South University, Suite 302, Little Rock 72205	664-4044
ORS	Peeples, R. Earl	110 Doctors Park Building, Little Rock 72205	227-4150
CHP	Peters, John E.	4301 West Markham, Slot 589, Little Rock 72201	661-5800
END	Peters, Phillip J.	10001 Lile Drive, Little Rock 72205	227-8000
OPH	Petursson, Gissur J.	4301 West Markham, Slot 523, Little Rock 72201	661-5150

Type of Practice	Member's Name	Address	Telephone Number
RD	Phillips, Bert L.	4525 Rosemont Drive, North Little Rock 72116 (Res)	753-6057
OBG	Phillips, Charles E.	800 Medical Towers Building, Little Rock 72205	227-5885
PUD	Phillips, James R	890 Medical Towers Building, Little Rock 72205	224-0110
#	Phipps, W E., Jr	North Little Rock	
GS	Pike, John D	500 South University, Little Rock 72205	664-4321
FP	Pledger, Norman R	3629 McCain Boulevard, North Little Rock 72116	758-2644
AN	Pollard, Arlee E.	500 South University, Little Rock 72205	664-4532
PS	Pope, Norton A	850 Medical Towers Building, Little Rock 72205	227-6464
ORS	Porter, Robert A., Jr.	1100 North University, #30, Little Rock 72207	664-7710
OTO	Potts, Jerry L.	3629 McCain Boulevard, North Little Rock 72116	753-8444
GE	Power, Robert C.	409 North University, Little Rock 72205	664-6980
R	Prather, Jerry L.	500 South University, Little Rock 72205	664-3914
CD	Price, Ben O	500 South University, Little Rock 72205	664-9535
RD	Pringos, Andrew A	29 Pine Manor Drive, Little Rock 72207 (Res.)	663-6230
#	Proctor, Clark B	Little Rock	
FP	Purdy, Harold D	6924 Geyer Springs Road, Little Rock 72209	562-1463
IM	Pyle, Hoyte R., Jr.	5918 Lee, Little Rock 72205	664-2500
OBG	Quirk, J Gerald	4301 West Markham, Slot 518, Little Rock 72201	661-5921
N	Ragsdill, Mary L.	2003 Fendley Drive, North Little Rock 72114	753-5462
CDS	Ransom, John M.	330 Medical Towers Building, Little Rock 72205	224-1508
D	Raque, Carl J	500 South University, Suite 704, Little Rock 72205	666-5451
IM	Rasch, James R.	Post Office Box 5080, Little Rock 72225	661-1202
TS	Read, Raymond C.	4300 West 7th, Little Rock 72205	660-2038
PUD	Rector, Nancy F.	890 Medical Towers Building, Little Rock 72205	224-0110
NS	Reding, David L	750 Medical Towers Building, Little Rock 72205	225-0880
U	Redman, John F	4301 West Markham, Slot 540, Little Rock 72201	661-5240
OBG	Reed, Ewing C., Jr.	300 Doctors Park Building, Little Rock 72205	227-6377
P	Reese, William G	4301 West Markham, Slot 506, Little Rock 72201	661-5266
RD	Regnier, George G	162 Fairway Drive, Mountain Home 72653 (Res)	425-2534
P	Reid, Gene W	1100 North University, Suite 262, Little Rock 72205	664-3732
CD	Richards, Mary K	600 Freeway Medical Towers, Little Rock 72204	666-5000
FP	Riddle, John F., Jr.	8824 Chicot Road, Little Rock 72209	562-8600
FP	Riegler, N W., Jr	1024 Scott, Little Rock 72202	375-3326
	Riggs, Orval E.	Clarksburg, West Virginia	
FP	Riley, William H.	4202 South University, Little Rock 72204	562-4838
CHP	Ringdahl, Irving C.	804 Wolfe, Little Rock 72201	370-1359
OPH	Roberson, Michael C	623 Woodlane, Little Rock 72201	374-6491
GYN	Rodgers, C. Dudley, Jr.	500 South University, Suite 414, Little Rock 72205	664-4683
FP	Rodgers, Charles H.	4202 South University, Little Rock 72204	562-4838
RD	Rodgers, Clyde D.	5223 Hawthorne, Little Rock 72207 (Res.)	663-7502
ORS	Rooney, Thomas P.	3629 McCain Boulevard, #100, North Little Rock 72116	758-2046
RD	Rosenbaum, Carl A	101 Cambridge Place, Little Rock 72207 (Res.)	227-9395
RD	Ross, Robert W	123 Normandy Road, Little Rock 72207 (Res.)	663-2052
ONC	Ross, S William	#1 St Vincent Circle, #110, Little Rock 72205	664-6600
RD	Rothert, Frances C	Benedictine Manor, Hot Springs 71914 (Res)	623-1571
OTO	Rounsaville, Harry L	500 South University, Suite 321, Little Rock 72205	664-9082
OPH	Roy, F. Hampton	1000 Medical Towers Building, Little Rock 72205	227-6980
OTO	Ruggles, Dwayne L.	520 West 26th, North Little Rock 72114	758-6560
ORS	Runyan, William A.	110 Doctors Park Building, Little Rock 72205	227-4150
GS	Rutledge, William L.	5800 West 10th, Suite 405, Little Rock 72204	661-1462
ORS	Saer, Edward H., III	#1 St Vincent Circle, #210, Little Rock 72205	661-0350
PH	Saltzman, Ben N	4815 West Markham, Little Rock 72205	661-2111
TS	Satterfield, John V.	500 South University, Little Rock 72205	664-6050
ORS	Schock, Charles C.	Post Office Box 5270, Little Rock 72215	224-6900
FP	Schratz, Bruce E.	1801 Maple, North Little Rock 72114	758-1002
OPH	Schroeder, George T.	260 Doctors Park Building, Little Rock 72205	224-4484
IM	Schultz, John C.	10001 Lile Drive, Little Rock 72205	227-8000
GS	Schwander, Howard	320 Doctors Park Building, Little Rock 72205	227-7200
OPH	Scruggs, Jan W.	312 West Pershing, North Little Rock 72114	758-7627
ORS	Seale, Karen S.	4301 West Markham, Slot 531, Little Rock 72201	661-5251
PUD	Searcy, Robert M.	10001 Lile Drive, Little Rock 72205	227-8000
R	Seibert, Joanna J.	804 Wolfe, Little Rock 72201	370-1175
ORS	Selakovich, Walter G	500 South University, Little Rock 72205	666-2824
P	Shannon, Robert F	11700 Rainwood, #5, Little Rock 72212	224-0529
OPH	Shock, John P.	4301 West Markham, Slot 523, Little Rock 72201	661-5150
FP	Short, Harold K	#2 Crestview Plaza, Jacksonville 72076	982-4551
IM	Silvoso, Gerald R	10001 Lile Drive, Little Rock 72205	227-8000
OBG	Simmons, Orman W	#1 Lile Court, Little Rock 72205	224-5500
RD	Simpson, N Henry, Jr	148 Pleasant Valley Drive, Little Rock 72212 (Res.)	255-5558
P	Sims, James M.	3629 McCain Boulevard, #302, North Little Rock 72116	758-9993
ADM	Sims, Neil H	4301 West Markham, Slot 592, Little Rock 72201	661-5320
PTH	Singleton, L. Gene	1120 Medical Towers Building, Little Rock 72205	227-2888
GS	Sipes, Frank M.	1100 North University, Suite 231, Little Rock 72207	664-4596
OBG	Skokos, C. Kemp	500 South University, Suite 414, Little Rock 72205	664-4131
ORS	Slater, John G., Jr	1100 North University, Suite 30, Little Rock 72207	664-7710
PTH	Slaven, John E.	1120 Medical Towers Building, Little Rock 72205	227-2888
R	Slayden, John E.	1100 Medical Towers Building, Little Rock 72205	227-5240
AN	Sloan, Fay M.	9601 Lile Drive, Plaza A, Little Rock 72205	227-9114
GYN	Sloan, James M.	500 South University, Little Rock 72205	664-2277
GE	Smart, Douglas F.	409 North University, Little Rock 72205	664-6980
P	Smith, Aubrey C.	#1 St Vincent Circle, #260, Little Rock 72205	664-0001
CD	Smith, David E.	360 Doctors Park Building, Little Rock 72205	224-6525
OBG	Smith, Douglas B.	#1 Lile Court, Little Rock 72205	224-5500
P	Smith, G Richard, Jr	4301 West Markham, Slot 554, Little Rock 72201	661-5600
OPH	Smith, James L.	623 Woodlane, Little Rock 72201	374-6491
OPH	Smith, Joe E.	7107 West 12th, Little Rock 72204	666-8627
FP	Smith, John McCollough	4000 Woodlawn, Little Rock 72205	666-6570
GYN	Smith, Mose, III	5326 West Markham, Little Rock 72205	664-1527
A	Smith, Purcell, Jr	Post Office Box 5675, Little Rock 72215	227-5210
GE	Smith, Thomas J.	409 North University, Little Rock 72205	664-6980
PD	Smith, Thomas W.	500 South University, Suite 200, Little Rock 72205	664-4117
OTO	Smith, Tom	300 Medical Towers Building, Little Rock 72205	227-4863
OTO	Snyderman, Nancy L.	4301 West Markham, Slot 538, Little Rock 72201	661-5612
FP	Somers, A. Jack	330 Doctors Park Building, Little Rock 72205	227-6363
ORS	Sorrells, R. Barry	Post Office Box 5270, Little Rock 72215	224-6900
PDC	Sotomora, Ricardo F	340 Medical Towers Building, Little Rock 72205	225-8821
RD	Spitzberg, Irving J.	307 North Cedar, Little Rock 72205 (Res.)	663-6877
EM	Spurgeon, P Stanley	4301 West Markham, Slot 584, Little Rock 72201	661-5515
PUD	Squire, Arthur E., Jr.	10001 Lile Drive, Little Rock 72205	227-8000
GS	Stair, John M	2007 Fendley Drive, North Little Rock 72114	758-2257
IM	Stanley, Joe P.	Pike Plaza Center, North Little Rock 72114	758-9823
ORS	Steele, William L	1100 North University, Suite 30, Little Rock 72207	664-7710
ONC	Sternberg, Jack J	1000 North University, Suite 100, Little Rock 72207	661-0060
IM	Stockley, Susan M	1100 North University, Suite 125, Little Rock 72207	664-1540
FP	Storeygard, Alan R	Post Office Box 459, Jacksonville 72076	982-2141
FP	Stotts, John R.	Post Office Box 7219, Little Rock 72217	663-9415
CD	Stout, Kimber M.	2000 Fendley Drive, #102, North Little Rock 72114	758-5133

Type of Practice	Member's Name	Address	Telephone Number
FP	Strauss, Alvin W , Jr	#5 St Vincent Circle, #301, Little Rock 72205	666-3666
IM	Strauss, Mark A	#5 St Vincent Circle, #301, Little Rock 72205	666-3666
FP	Strode, Steven W	4301 West Markham, Slot 530, Little Rock 72201	375-2171
PD	Stroope, George F.	516 West Pershing, North Little Rock 72114	758-1530
OBG	Struble, Harlan	270 Medical Towers Building, Little Rock 72205	224-6300
PS	Stuckey, James G , Jr	500 South University, Suite 601, Little Rock 72205	664-4383
GYN	Studdard, James D	250 Doctors Park Building, Little Rock 72205	225-9905
U	Sulieman, John S D	518 West 26th, North Little Rock 72114	758-6111
PTH	Sullivan, Charles D	1120 Medical Towers Building, Little Rock 72205	227-2888
N	Sullivan, Jan R	8924 Kanis Road, Little Rock 72205	227-4750
P	Sundermann, Richard H	Veterans Admin Hospital, North Little Rock 72114	661-1202
OM	Sung, Michael Y	Post Office Box 18159, Little Rock 72219	455-1331
RD	Swindoll, Bryant S.	3415 North Hills Blvd , North Little Rock 72116 (Res)	753-3029
PTH	Taft, Eric D	411 Doctors Building, Little Rock 72205	664-2593
OBG	Tanner, James A	#1 Lile Court, Suite 200, Little Rock 72205	224-5500
OBG	Taylor, David R	1224 Braden, Jacksonville 72076	982-3461
IM	Taylor, Eugene H	10001 Lile Drive, Little Rock 72205	227-8000
CRS	Tedford, John G.	500 South University, Suite 315, Little Rock 72205	664-8466
RD	Teeter, John A	15 Nottingham Road, #10, Little Rock 72205 (Res.)	663-6711
GE	Texter, E Clinton, Jr.	4301 West Markham, Slot 567, Little Rock 72201	661-6012
OPH	Thomas, A Henry	500 South University, Little Rock 72205	664-8445
ORS	Thomas, Jerry L.	#1 St. Vincent Circle, #210, Little Rock 72205	661-0350
GS	Thomas, Peter O.	1310 Cantrell Road, Little Rock 72201	374-5703
CD	Thompson, A James	#5 St. Vincent Circle, Little Rock 72205	664-5860
OTO	Thompson, Albert R	500 South University, Suite 206, Little Rock 72205	664-4381
AN	Thompson, Dola S.	4301 West Markham, Slot 515, Little Rock 72201	661-6119
IM	Thompson, John R	11215 Hermitage Road, #100, Little Rock 72211	225-2661
ORS	Thompson, S Berry, Jr	1100 North University, Suite 30, Little Rock 72207	664-7710
ORS	Thompson, Samuel B	1100 North University, Suite 30, Little Rock 72207	664-7710
ADM	Thorn, G Max	#1 St Vincent Circle, Little Rock 72205	660-3591
OBG	Thrower, Rufus, Jr	1601 South University, Little Rock 72204	663-6316
FP	Tilley, Steve B.	Post Office Box 7219, Little Rock 72217	663-9415
R	Tirman, Robert M.	4301 West Markham, Slot 556, Little Rock 72201	661-5740
ADM	Towbin, Eugene J	4300 West 7th, Little Rock 72205	660-2092
FP	Tracy, Phillip A.	Post Office Box 459, Jacksonville 72076	982-2141
ONC	Tranum, Bill L.	500 South University, Suite 401, Little Rock 72205	664-3008
GP	Trussell, Thomas W	5326 West Markham, #10, Little Rock 72205	663-6251
AN	Tseng, Jyi-Ming	9601 Lile Drive, Plaza A, Little Rock 72205	227-9114
FP	Tucker, R Stephen	424 North University, Little Rock 72205	664-4810
GS	Tucker, W Everett, Jr	990 Medical Towers Building, Little Rock 72205	227-9080
IM	Valentin-Stone, Paul E.	Post Office Box 5457, Jacksonville 72076	985-2537
AN	Valentine, Robert G , Jr.	2800 Percy Machin Drive, North Little Rock 72114	758-4806
AN	Vaughter, W Roger	#3 Ken Circle, Little Rock 72207 (Res.)	664-3789
FP	Venable, Robert S	Post Office Box 3361, Little Rock 72203	663-3310
PS	Vogel, Robert G	11219 Hermitage Road, #200, Little Rock 72211	227-6063
FP	Wade, William I., Jr.	424 North University, Little Rock 72205	664-4810
IM	Wagoner, Jack	5918 Lee, Little Rock 72205	664-2500
GS	Walt, James R	500 South University, Suite 600, Little Rock 72205	664-4146
IM	Ward, Harry P	4301 West Markham, Slot 541, Little Rock 72201	661-5680
AN	Ward, Joseph P.	9601 Lile Drive, Plaza A, Little Rock 72205	227-9114
PD	Warford, Lloyd R.	500 South University, Little Rock 72205	664-4044
RD	Warford, Walton R	3737 Lakeshore Drive, North Little Rock 72116 (Res.)	753-4193
CDS	Watkins, Charles J	#5 St Vincent Circle, #201, Little Rock 72205	666-2894
OPH	Watkins, John G., Jr.	230 Doctors Park Building, Little Rock 72205	227-6797
OPH	Watkins, John G., III	230 Doctors Park Building, Little Rock 72205	227-6797
IM	Watkins, Larry S.	500 South University, Suite 402, Little Rock 72205	661-9740
RD	Watson, Robert	30 Edgehill, Little Rock 72207 (Res)	663-6680
ORS	Weber, Edward R.	5800 West 10th, Suite 410, Little Rock 72204	664-4088
FP	Weber, James R	Post Office Box 188, Jacksonville 72076	982-2108
ORS	Weber, Michael J	3629 McCain, North Little Rock 72116	753-1747
GS	Weiss, Gerald N	4300 West 7th, Little Rock 72205	661-1202, Ext. 2038
CDS	Weiss, John B	780 Medical Towers Building, Little Rock 72205	224-1508
NEP	Wellons, James A , Jr.	350 Medical Towers Building, Little Rock 72205	224-2141
OBG	Wells, Clay N	4301 West Markham, Slot 518, Little Rock 72201	661-5925
PS	Wende, Raymond A	11219 Hermitage Road, #200, Little Rock 72211	227-6063
RD	Wenger, Carl E.	14300 Rock Creek Pkwy , #7618, Little Rock 72211 (Res.)	NF
GS	Westbrook, Kent C	4301 West Markham, Slot 520, Little Rock 72201	661-5987
P	Westerfield, Frank M , Jr.	230 Medical Towers Building, Little Rock 72205	225-0777
OS	Westerman, G Richard, Jr	804 Wolfe, Little Rock 72201	370-1898
	Whitaker, Gary R	Fairview, North Carolina	
FP	White, Oba B	908 High, Little Rock 72202	374-3609
#	Wilbur, E Lloyd	Little Rock	
RD	Wilkes, Elbert H.	5801 Hawthorne Road, Little Rock 72207 (Res.)	663-7123
OPH	Wilkes, T. David I.	4301 West Markham, Slot 523, Little Rock 72201	661-5150
GE	Williams, Alonzo D , Sr	5800 West 10th, #305, Little Rock 72204	666-7700
CDS	Williams, C David	200 Medical Towers Building, Little Rock 72205	224-5666
CDS	Williams, G Doyne, Jr	#5 St Vincent Circle, #210, Little Rock 72205	666-2894
NS	Williams, Ronald N	750 Medical Towers Building, Little Rock 72205	225-0880
OTO	Wilson, Frances C.	#1 St. Vincent Circle, #330, Little Rock 72205	663-3716
PUD	Wilson, Frank J , Jr	5800 West 10th, #610, Little Rock 72204	661-9393
CD	Wilson, James W	#1 St. Vincent Circle, #440, Little Rock 72205	664-9040
FP	Wilson, Jed D	705 North Ash, Little Rock 72207 (Res)	663-5413
ORS	Wilson, John L.	601 North University, Little Rock 72205	666-0188
OPH	Wilson, R Sloan	500 South University, Suite 519, Little Rock 72205	664-1104
IM	Winn, Charles R	240 Doctors Park Building, Little Rock 72205	227-6659
OBG	Wong, Ting C	4301 West Markham, Slot 518, Little Rock 72201	661-5490
FP	Woods, Gary A	4301 West Markham, Slot 530, Little Rock 72201	375-2171
N	Woody, Robert C	804 Wolfe, Little Rock 72201	370-1850
FP	Wortham, Thomas H	Post Office Box 459, Jacksonville 72076	982-2141
CDS	Wright, Ruel N	#5 St Vincent Circle, #201, Little Rock 72205	666-2894
PTH	Young, Douglas E	Baptist Medical Center, Pathology Dept , Little Rock 72201	771-3264
RD	Zell, Lawrence M	Star Route, Box 88-B, Tucker 72168 (Res)	842-2216

RANDOLPH COUNTY

GS	Arpayoglou, Alejandro	Post Office Box 347, Pocahontas 72455	892-4406
CD	Ascarrunz, Rolando C	Doctors Building, Suite 500, Pocahontas 72455	892-2506
FP	Baltz, Albert L.	Route 5, Doctors Medical Bldg , Pocahontas 72455	892-4467
FP	Baltz, M A	110 West Broadway, Pocahontas 72455	892-3111
FP	Barre, Hal S	Route 5, Doctors Medical Bldg , Pocahontas 72455	892-4497
GP	DeClerk, Thomas B	Route 5, Doctors Medical Bldg , Pocahontas 72455	892-3344
GS	Hadad, Anibal R	Post Office Box 725, Pocahontas 72455	892-4406
FP	Holt, Danny B	Route 5, Doctors Medical Bldg., Pocahontas 72455	892-4467
FP	Jansen, Andrew J., III	Route 5, Doctors Medical Bldg , Pocahontas 72455	892-4467
FP	Lombardo, Richard J	Route 4, Box 24-A, Pocahontas 72455	892-4464
RD	Scott, William W	Post Office Box 466, Pocahontas 72455 (Res.)	892-5844
RD	Smith, Norman K.	1912 Park, Pocahontas 72455 (Res)	892-5879

Type of Practice	Member's Name	Address	Telephone Number
		SALINE COUNTY	
RD	Ashby, John W	312 Dogwood, Benton 72015 (Res.)	778-2470
R	Ashby, Robert M	815 North East, Benton 72015	778-6555
PD	Atkins, Mary J.	115 McNeil, Benton 72015	778-0421
GS	Baber, Ouin M	105 McNeil, Benton 72015	778-7435
FP	Bethel, James C.	4300 West 7th, Little Rock 72205	661-1202
OBG	Caldwell, David L	910 North East, Benton 72015	778-0426
ORS	Cash, Ralph D.	105 McNeil, Benton 72015	778-1388
GP	Coker, S Dale	Benton Services Center, Bldg 6, Benton 72015	371-1906
FP	Cornwell, Samuel L	Route 3, Box 225, Benton 72015	778-1111
OBG	Council, Robert A, Jr	910 North East, Benton 72015	778-0426
ORS	Duncan, J. Shelby	105 McNeil, Benton 72015	778-1388
OPH	Gardner, Dan R	Post Office Box 340, Benton 72015	778-8843
	Hermann, Ernest J., Jr	Abilene, Texas	
IM	Hill, Edward B	1200 North Main, Benton 72015	778-5740
GP	Hogue, F Paul	302 West South, Benton 72015	778-4511
FP	Hood, C Ted	Post Office Box 483, Bryant 72022	847-0082
FP	Izard, Ralph S., Jr	101 Northwest 3rd, Suite D, Bryant 72022	847-0289
FP	Johnston, Greg	205 Carpenter, Benton 72015	778-8264
FP	Kirk, Marvin N, Jr	205 Carpenter, Benton 72015	778-8264
GP	Martindale, J L	302 West South, Benton 72015	778-4511
RD	Mizell, Walter S	14300 Rock Creek Pkwy, #7458, Little Rock 72211 (Res.)	223-2791
AN	Porter, Jim C.	4301 West Markham, Little Rock 72201	661-6114
OM	Ramsay, Rex C., Jr	Post Office Box 300, Bauxite 72011	778-3644
FP	Stewart, David L.	205 Carpenter, Benton 72015	778-8264
FP	Taggart, Sam D	Post Office Box 969, Benton 72015	778-0934
OBG	Thibault, Frank G, Jr	910 North East, Benton 72015	778-0426
IM	Thomas, Bill R	1200 North Main, Benton 72015	778-5740
PD	Thompson, Steven M	1200 North Main, Benton 72015	778-5002
RD	Thorn, H B, Jr.	Route 6, Box 1200, Benton 72015 (Res.)	778-4858
FP	Tilley, Roger L.	302 West South, Benton 72015	778-4511
GS	Viner, Donald L	105 McNeil, Benton 72015	778-7435
FP	Wright, John D	321 Short, Benton 72015	776-0603
		SCOTT COUNTY	
GS	Ahmed, S A	Post Office Box 547, Waldron 72958	637-3135
		SEBASTIAN COUNTY	
R	Albers, David G	Post Office Box 1827, Fort Smith 72902	782-5035
ORS	Alberty, Joe P	7303 Rogers, Suite 418, Fort Smith 72903	452-3500
EM	Alexander, R. Kent	1311 South "I", Fort Smith 72901	441-5011
GS	Anderson, Paul M.	1501 South Waldron, Fort Smith 72903	452-9316
U	Armstrong, Sinclair W, Jr	7303 Rogers, Fort Smith 72903	484-5220
OBG	Atkins, Jimmie G	1500 Dodson, Fort Smith 72901	782-2071
GP	Bailey, Charles W	Post Office Box 426, Greenwood 72936	996-4111
P	Baker, Max A.	2112 South Greenwood, Fort Smith 72901	785-2361
GE	Barker, Robert C., Jr	1500 Dodson, Fort Smith 72901	782-2071
ONC	Barnes, L. Ford	Post Office Box 3528, Fort Smith 72913	452-2077
N	Barry, James M., Jr.	1500 Dodson, Fort Smith 72901	782-2071
AN	Berryhill, Richard E.	216-A North Greenwood, Fort Smith 72901	783-1497
OBG	Berumen, Mike	Post Office Box 3528, Fort Smith 72913	484-5220
GE	Bordeaux, Ronald A	Post Office Box 3528, Fort Smith 72913	452-2077
D	Bradford, A. C	Post Office Box 3528, Fort Smith 72913	452-2077
P	Bradley, Joe F.	2112 South Greenwood, Fort Smith 72901	785-2361
R	Broadwater, John R	(Address unknown)	
ORS	Brown, Byron L	Post Office Box 1743, Fort Smith 72902	783-3604
RD	Brown, James A.	6810 South "T", Fort Smith 72903 (Res)	452-1231
R	Brown, Richard N	1501 South Waldron, #109, Fort Smith 72903	452-9416
FP	Buffaloe, Robert N	Post Office Box 5266, Fort Smith 72913	452-6362
ORS	Buie, James H	1500 Dodson, Fort Smith 72901	782-2071
FP	Busby, J David	Post Office Box 2607, Fort Smith 72902	785-2471
PD	Cabell, Ben B	312 South 16th, Fort Smith 72901	782-7921
FP	Carson, Randall L	1120 Lexington, Fort Smith 72901	785-2655
FP	Carter, D Mike	9101 Jenny Lind, Fort Smith 72903	646-3703
R	Cassady, Calvin R	501 South 16th, Fort Smith 72901	782-5035
P	Chambers, A Pat	2901 South 74th, Fort Smith 72903	484-5720
RD	Chamblin, Don W	2500 Fresno Place, Fort Smith 72901 (Res.)	646-5391
AN	Chester, Robert L.	1500 Dodson, Fort Smith 72901	782-2071
AN	Coffman, Edwin L.	1500 Dodson, Fort Smith 72901	782-2071
NEP	Coleman, Michael D	1500 Dodson, Fort Smith 72901	782-2071
#	Crigler, Ralph E.	Fort Smith	
R	Crow, Neil E., Jr.	1500 Dodson, Fort Smith 72901	782-2071
R	Crow, Neil E., Sr	1500 Dodson, Fort Smith 72901	782-2071
R	Culp, William C.	1501 South Waldron, #109, Fort Smith 72903	452-9416
RD	Cunningham, Charles S	212 Mocking Bird Lane, Poteau, Oklahoma 74953 (Res)	918-647-4904
PTH	Davenport, O Leo	923 Lexington, Fort Smith 72901	785-1447
CD	Deaton, John M.	1500 Dodson, Fort Smith 72901	782-2071
RHU	Deneke, James S.	Post Office Box 3528, Fort Smith 72913	452-2077
P	Desrochers, Paul E.	7302 Rogers, Fort Smith 72903	452-9115
P	Dorzab, Joe H	2901 South 74th, Fort Smith 72903	484-5720
FP	Dudding, William F	3104 Executive Park, #103, Fort Smith 72903	452-9012
ORS	Duffner, David W	7303 Rogers, Suite 218, Fort Smith 72903	484-5220
FP	Durmon, Beuford T.	7303 Rogers, Suite 301, Fort Smith 72903	452-4552
IM	Edmondson, Steve A.	320 North Greenwood, Fort Smith 72901	782-4470
OBG	Ellis, Homer G	Post Office Box 3507, Fort Smith 72913	785-2411
TR	Erickson, Clark A.	1500 Dodson, Fort Smith 72901	782-2071
RD	Faier, S Z.	5801 South Cliff Drive, Fort Smith 72903 (Res)	452-0184
ONC	Fecher, Dennis R	1500 Dodson, Fort Smith 72901	782-2071
U	Feder, Frederick P., Jr	520 Lexington, Fort Smith 72901	782-7261
OBG	Feezell, Randall E.	Post Office Box 3507, Fort Smith 72903	785-2411
FP	Feild, T A., III	3600 North "O", Fort Smith 72904	783-5158
OPH	Felker, Gary V	3000 Rogers, Fort Smith 72901	782-8892
AN	Fisher, Robert D.	1500 Dodson, Fort Smith 72901	782-2071
PD	Floyd, Charles H.	617 South 16th, Fort Smith 72901	783-3165
U	Francis, Darryl R, II	7303 Rogers, Fort Smith 72903	484-5220
OTO	Gedosh, Edgar A	600 South 16th, Fort Smith 72901	782-6022
R	Gill, James A	1500 Dodson, Fort Smith 72901	782-2071
CD	Gilliland, J. Campbell	1500 Dodson, Fort Smith 72901	782-2071
PD	Gilmore, Myriam D	1500 Dodson, Fort Smith 72901	782-1521
PTH	Girkin, R. Gene	923 Lexington, Fort Smith 72901	785-1447
IM	Glassell, Edwin C	1500 Dodson, Fort Smith 72901	782-2071
OBG	Glover, D. Bruce	Post Office Box 3507, Fort Smith 72913	785-2411
PS	Goodman, R Cole, Jr.	1500 Dodson, Fort Smith 72901	782-2071
AN	Goodman, Raymond C., Sr	1500 Dodson, Fort Smith 72901	782-2071
EM	Graves, Stephen C.	7301 Rogers, Fort Smith 72903	452-5100

Type of Practice	Member's Name	Address	Telephone Number
FP	Greene, James S	603 Lexington, Fort Smith 72901	783-8917
N	Griggs, William L., III	1500 Dodson, Fort Smith 72901	782-2071
AN	Grimes, Alfred H.	1500 Dodson, Fort Smith 72901	782-2071
ORS	Hathcock, Alfred B	1500 Dodson, Fort Smith 72901	782-2071
AN	Herren, Adrian L.	216-A North Greenwood, Fort Smith 72901	783-1497
U	Hewett, Archie L.	600 South 14th, Fort Smith 72901	785-2604
IM	Hinkle, Richard A., Jr	1501 South Waldron, Fort Smith 72903	452-8753
OBG	Hoffman, John D.	Post Office Box 3528, Fort Smith 72913	452-2077
GS	Hoge, Marlin B	1501 South Waldron, #201, Fort Smith 72903	452-9316
CD	Holman, William A	Post Office Box 3528, Fort Smith 72913	452-2077
GS	Holmes, Williams C., Jr.	Post Office Box 3528, Fort Smith 72913	452-2077
ADM	Hornberger, E. Z., Jr	1311 South "I", Fort Smith 72901	441-5440
A	Howell, James T.	1420 South "I", Fort Smith 72901	782-2983
OPH	Hughes, Robert P., Jr	3000 Rogers, Fort Smith 72901	782-8892
R	Huskison, William T	1501 South Waldron, #109, Fort Smith 72903	452-9416
OBG	Hyde, Marshall L.	Post Office Box 3507, Fort Smith 72913	785-2411
FP	Ingram, Ralph N	1120 Lexington, Fort Smith 72901	785-2655
ORS	Irwin, Peter J	1500 Dodson, Fort Smith 72901	782-2071
GS	Janes, Robert H., Jr	1500 Dodson, Fort Smith 72901	782-2071
RD	Jones, W Duane	5610 South Enid, Fort Smith 72903 (Res.)	452-0484
GS	Kelly, Thomas C	Post Office Box 3528, Fort Smith 72913	452-2077
GYN	Kelsey, J F	Post Office Box 3507, Fort Smith 72913	785-2411
RD	Kennedy, Virgil N	5417 Grand, Fort Smith 72904 (Res.)	452-3351
IM	Kientz, John, Jr	1500 Dodson, Fort Smith 72901	782-2071
FP	King, William P	605 Lexington, Fort Smith 72901	782-6081
CD	Klopfenstein, Keith	1500 Dodson, Fort Smith 72901	782-2071
ORS	Knight, William E.	1500 Dodson, Fort Smith 72901	782-2071
END	Kocher, David B	Post Office Box 3528, Fort Smith 72913	452-2077
FP	Koenig, A Samuel, III	2420 Rogers, Fort Smith 72901	782-4000
RD	Koenig, Albert S., Jr	2122 South "W", Fort Smith 72901 (Res.)	783-7233
OBG	Kradel, R Paul	Post Office Box 3528, Fort Smith 72913	452-2077
FP	Kramer, Ralph G	603 Lexington, Fort Smith 72901	783-8917
FP	Kutait, Kemal E.	1120 Lexington, Fort Smith 72901	785-2655
IM	Lambiotte, Louis O	1500 Dodson, Fort Smith 72901	782-2071
PTH	Landrum, Annette V	100 South 14th, Fort Smith 72901	785-2431
GS	Landrum, Samuel E.	2901 South 74th, Fort Smith 72903	452-5332
OTO	Lane, Charles S., Jr	600 South 16th, Fort Smith 72901	782-6022
U	Lange, John L.	1500 Dodson, Fort Smith 72901	782-2071
AN	Lenington, Jerry O.	1500 Dodson, Fort Smith 72901	441-5291
IM	Lewing, Hugh S	404 South 16th, Fort Smith 72901	783-3158
D	Lewis, John E.	1500 Dodson, Fort Smith 72901	782-2071
FP	Lilly, Ken E.	1120 Lexington, Fort Smith 72901	785-2655
NS	Lockhart, William G	1500 Dodson, Fort Smith 72901	782-2071
GS	Lockwood, Frank M	1500 Dodson, Fort Smith 72901	782-2071
ORS	Long, James W	1500 Dodson, Fort Smith 72901	782-2071
R	Lynch, Thomas P	1501 South Waldron, #109, Fort Smith 72903	452-9416
NS	MacDade, Albert D	1500 Dodson, Fort Smith 72901	782-2071
D	Magness, Jack L., Jr	Post Office Box 3528, Fort Smith 72913	452-2077
CD	Manus, Stephen C	Post Office Box 3528, Fort Smith 72913	452-2077
RD	Martin, Art B	2121 Wolfe Lane, Fort Smith 72901 (Res.)	783-1237
FP	Martin, Maurice C. "Rick"	Post Office Box 366, Greenwood 72936	996-4112
OBG	Mason, Joe N	1500 Dodson, Fort Smith 72901	782-2071
GE	Masri, Hassan M	1500 Dodson, Fort Smith 72901	782-2071
PD	McClain, Merle E.	312 South 16th, Fort Smith 72901	782-7921
FP	McCraw, Gordon W	Post Office Box 110, Booneville 72927	675-2455
GP	McDonald, H P.	2044 North 29th, Fort Smith 72904	782-4833
OPH	McEwen, Stanley R.	3000 Rogers, Fort Smith 72901	782-7792
FP	McKinney, Robert D	Post Office Box 426, Greenwood 72936	996-4111
RD	McMinimy, D J	4110 South 34th, Fort Smith 72903 (Res.)	646-3301
GP	Meador, Don M	Post Office Box 700, Barling 72923	452-2270
ORS	Michaud, Jean P	7303 Rogers, Fort Smith 72903	484-5220
R	Miller, Robert C.	1500 Dodson, Fort Smith 72901	782-2071
GS	Mings, Harold H	1500 Dodson, Fort Smith 72901	782-2071
GP	Mitchell, Bob G	Sequoyah East Nursing Home, Roland, Oklahoma 74954	427-7401
OPH	Moulton, Everett C., Jr.	7303 Rogers, #318, Fort Smith 72903	452-9043
OPH	Moulton, Everett C., III	7303 Rogers, #318, Fort Smith 72903	452-9043
ORS	Mumme, Marvin E.	1500 Dodson, Fort Smith 72901	782-2071
OBG	Muylaert, Michel	1501 South Waldron, #208, Fort Smith 72903	452-8158
PD	Nassri, Louay K	1500 Dodson, Fort Smith 72901	782-2071
PUD	Nichols, David R	1500 Dodson, Fort Smith 72901	782-2071
D	Niemann, Jeffrey M	316 Lexington, Fort Smith 72901	783-1121
CD	Nolewajka, Andre J	Post Office Box 3528, Fort Smith 72913	452-2077
GS	Olson, John D	1500 Dodson, Fort Smith 72901	782-2071
FP	Parham, Gordon R	605 Lexington, Fort Smith 72901	782-6081
GE	Paris, Charles H.	Post Office Box 3528, Fort Smith 72913	452-2077
ORS	Parker, Douglas W., Jr	1500 Dodson, Fort Smith 72901	782-2071
IM	Parker, Stephen M	320 North Greenwood, Fort Smith 72901	782-4470
R	Parker, Thomas G	1501 South Waldron, #109, Fort Smith 72903	452-9416
CDS	Patrick, Donald L.	1500 Dodson, Fort Smith 72901	782-2071
OBG	Pearce, Larry W	Post Office Box 3528, Fort Smith 72913	484-5220
IM	Pence, Eldon D., Jr.	1501 South Waldron, Fort Smith 72903	452-8753
FP	Perrymore, W Dale	Post Office Box 5266, Fort Smith 72913	452-6362
GYN	Phillips, W P	Post Office Box 3507, Fort Smith 72913	785-2411
FP	Pillstrom, Lawrence G	1120 Lexington, Fort Smith 72901	785-2655
IM	Poe, McDonald, Jr.	1501 South Waldron, Fort Smith 72903	452-8753
OBG	Poole, M Louis	1501 South Waldron, Fort Smith 72903	452-8158
CD	Pope, John R	1500 Dodson, Fort Smith 72901	782-2071
PD	Post, James M	617 South 16th, Fort Smith 72901	783-3165
IM	Pradel, Paul A	1501 South Waldron, #100, Fort Smith 72903	452-8753
CD	Prewitt, Taylor A	Post Office Box 3528, Fort Smith 72913	452-2077
IM	Price, Lawrence C	404 South 16th, Fort Smith 72901	783-3158
NEP	Rabideau, Dana P	1500 Dodson, Fort Smith 72901	782-2071
ORS	Raby, Paul L.	7303 Rogers, #218, Fort Smith 72903	484-5220
OTO	Raymond, Thomas H.	600 South 16th, Fort Smith 72901	782-6022
N	Reul, Charles G	1500 Dodson, Fort Smith 72901	782-2071
EM	Reyenga, Stanley L.	1311 South "I", Fort Smith 72901	441-5011
	Robertson, Robert A	Shreveport, Louisiana	
END	Robinson, Ronald P	Post Office Box 3528, Fort Smith 72913	452-2077
R	Rogers, Paul L.	1501 South Waldron, #109, Fort Smith 72903	452-9416
FP	Ross, R Wendell	1120 Lexington, Fort Smith 72901	785-2655
R	Russell, Rex D	1500 Dodson, Fort Smith 72901	782-2071
AN	Safranek, Edward J.	216-A North Greenwood, Fort Smith 72901	783-1497
GS	Saviers, Boyd M.	1500 Dodson, Fort Smith 72901	782-2071
AN	Schemel, William H	216-A North Greenwood, Fort Smith 72901	783-1497
IM	Schwarz, Paul R.	404 South 16th, Fort Smith 72901	783-3158
N	Serrano, Ernest E.	1500 Dodson, Fort Smith 72901	782-2071
GYN	Sherman, Robert L	Post Office Box 3507, Fort Smith 72913	785-2411

Type of Practice	Member's Name	Address	Telephone Number
GP	Shermer, Jonathan P	623 South 21st, Fort Smith 72901	783-4014
ORS	Sherrill, William M., Jr	1500 Dodson, Fort Smith 72901	782-2071
PTH	Sigler, John K	923 Lexington, Fort Smith 72901	785-1447
PTH	Smith, Kent	923 Lexington, Fort Smith 72901	785-1447
FP	Smith, Terrald J	7110 Rogers, Fort Smith 72903	452-6362
R	Snider, James R	1500 Dodson, Fort Smith 72901	782-2071
IM	Staggs, J David	320 North Greenwood, Fort Smith 72901	782-4470
RD	Stanton, William B	Route 1, Box 101-A, Rudy 72952 (Res.)	632-3241
PUD	Stewart, Jerry R	Post Office Box 3528, Fort Smith 72913	452-2077
RD	Stewart, John B	6710 South U, Fort Smith 72903 (Res.)	452-3277
PS	Still, Eugene F., II	1500 Dodson, Fort Smith 72901	782-2071
P	Stoltzman, Roger K	2901 South 74th, Fort Smith 72903	484-5720
FP	Swena, Richard R	302 North 13th, Fort Smith 72901	785-2425
OBG	Tate, William B	1500 Dodson, Fort Smith 72901	782-2071
RD	Thompson, J Kenneth	3804 Free Ferry, Fort Smith 72903 (Res.)	783-5711
GP	Thompson, James B	605 Lexington, Fort Smith 72901	782-6081
FP	Thompson, Robert J.	100 South 14th, Fort Smith 72901	785-2431
HEM	Turner, William F	1500 Dodson, Fort Smith 72901	782-2071
D	Vanderpool, Roy E	Post Office Box 3528, Fort Smith 72913	452-2077
FP	Venturina, Arturo P	Post Office Box 296, Huntington 72940	928-4404
CDS	Vernon, Rowland P., Jr	1500 Dodson, Fort Smith 72901	782-2071
U	Wahman, Gerald E.	1500 Dodson, Fort Smith 72901	782-2071
OPH	Wallace, Kenneth K	3000 Rogers, Fort Smith 72901	782-8892
PD	Walling, Robert V	617 South 16th, Fort Smith 72901	783-3165
PD	Watts, John C., Jr	500 South 16th, Fort Smith 72901	783-1085
PUD	Webb, William K.	Post Office Box 3528, Fort Smith 72913	452-2077
GS	Weisse, John J.	5622 Rogers, Fort Smith 72903	452-4400
HEM	Wells, John D	Post Office Box 3528, Fort Smith 72913	452-2077
EM	Westbrook, Michael R	1311 South "I", Fort Smith 72901	441-5011
AN	Westermann, Norman F	1500 Dodson, Fort Smith 72901	782-2071
GYN	Whitaker, T J, Jr	1823 Dodson, Fort Smith 72901	782-4929
END	White, J Earle, III	1501 South Waldron, #105, Fort Smith 72903	452-8661
A	Whiteside, Edwin	3416 Old Greenwood Road, Fort Smith 72903	646-8066
ORS	Wideman, John W	7303 Rogers, Suite 418, Fort Smith 72903	452-8121
GS	Wikman, John H	1500 Dodson, Fort Smith 72901	782-2071
CDS	Williams, Carl L.	522 South 16th, Fort Smith 72901	785-1080
CD	Williams, Thomas N	1500 Dodson, Fort Smith 72901	782-2071
OTO	Wills, Paul I	600 South 16th, Fort Smith 72901	782-6022
U	Wilson, Morton C.	1500 Dodson, Fort Smith 72901	782-2071
U	Wilson, Steven K	1500 Dodson, Fort Smith 72901	782-2071
ORS	Wolfe, Michael S.	7301 Rogers, Fort Smith 72903	484-5220
CDS	Woods, Leon P	1500 Dodson, Fort Smith 72901	782-2071
R	Worrell, John A	1501 South Waldron, #109, Fort Smith 72903	452-9416
CDS	Zufari, Munir M.	2917 South 74th, Fort Smith 72903	452-7333

SEVIER COUNTY

GP	Brown, Olie D, Jr	Post Office Drawer 890, DeQueen 71832	642-2465
FP	Carlson, Kevin R.	1605 Highway 70 West, DeQueen 71832	642-2840
FP	Jones, Charles N	Highway 70 West, DeQueen 71832	642-2022
GS	Stearns, David E.	1308 Highway 70 West, DeQueen 71832	642-5211
R	Yeh, William L.	1521 North 14th, DeQueen 71832 (Res)	642-5447

ST. FRANCIS COUNTY

GS	Bard, Ralph M	1740 Lindauer Road, Forrest City 72335	633-8960
OBG	Barker, Charles L.	Post Office Box 551, Forrest City 72335	633-7051
FP	Cogburn, Harold N	328 Kittel Road, Forrest City 72335	633-1425
GP	Collins, E Morgan, Jr	1801 Lindauer Road, Forrest City 72335	633-1952
FP	Crawley, Charles E.	328 Kittel Road, Forrest City 72335	633-1425
OBG	DeRossitt, James P., III	1712 Lindauer Road, Forrest City 72335	633-0091
U	Duffy, Thomas J	1600 Lindauer Road, Forrest City 72335	633-9021
FP	Fong, F H.	Post Office Box 735, Hughes 72348	339-2373
FP	Hammons, Edward P	328 Kittel Road, Forrest City 72335	633-1425
FP	McGuire, Samuel A., III	328 Kittel Road, Forrest City 72335	633-1425
GP	McPhail, George T.	1801 Lindauer Road, Forrest City 72335	633-1952

TRI-COUNTY

R	Allen, Lewis G	Baptist Memorial Hospital-Eastern Ozarks, Hardy 72542	257-4101
GP	Arnold, Carl B	Post Office Box 457, Salem 72576	895-3281
GP	Benton, Thomas H	Post Office Box 366, Salem 72576	895-2990
FP	Bozeman, Jim G	Highway 9 North, Salem 72576	895-2541
GP	Ducker, David E	Post Office Box 547, Salem 72576	895-3215
GS	Grasse, A Meryl	Post Office Box 438, Calico Rock 72519	297-3726
RD	Krygier, Albin J.	306 Royal Drive, Horseshoe Bend 72512 (Res)	670-5865
FP	Lane, Robert C.	Post Office Box 617, Calico Rock 72519	297-3726
RD	Meisenheimer, Martin P., III	Post Office Box 1019, Cherokee Village 72525 (Res)	257-3480
FP	Moody, Michael N	Post Office Box 829, Salem 72576	895-2541
GP	Plemmons, Lloyd H	Post Office Box 610, Cherokee Village 72525	257-3929
GP	Ross, Web	Calico Rock Medical Center, Calico Rock 72519	297-3726
FP	Smith, James F	Post Office Box 155, Horseshoe Bend 72512	670-5145
GP	Tatum, Harold M	Post Office Box D, Melbourne 72556	368-4344

UNION COUNTY

ORS	Bell, Robert S	619 West Grove, El Dorado 71730	863-5146
OBG	Booker, J Gregory	704 West Grove, #5, El Dorado 71730	863-8444
U	Bowman, Raymond N	619 North Newton, El Dorado 71730	862-5439
ORS	Callaway, James C.	705 West Faulkner, El Dorado 71730	863-6123
FP	Carroll, Peter J.	704 West Grove, #4, El Dorado 71730	863-5509
#	Clowney, Albert R.	El Dorado	
OTO	Cyphers, Charles D	519 West Faulkner, El Dorado 71730	862-3471
PTH	Dougherty, Bert	443 West Oak, El Dorado 71730	862-1351
GP	Dunn, Tom L.	Post Office Box 538, Hampton 71744	798-4272
PTH	Duzan, Kenneth R	443 West Oak, El Dorado 71730	862-1351
PTH	Elliott, Wayne G	443 West Oak, El Dorado 71730	862-1351
IM	Ellis, Jacob P	490 West Faulkner, El Dorado 71730	862-2489
RD	Fitch, Leston E.	38 Meadowbrook Drive, Conway 72032 (Res)	329-3230
IM	Flournoy, Durwood W	714 West Faulkner, El Dorado 71730	862-5184
P	Fraser, David B	715 North College, El Dorado 71730	862-7921
ORS	Giller, W John, Jr	705 West Faulkner, El Dorado 71730	863-6123
IM	Hardin, A Scott	714 West Faulkner, El Dorado 71730	862-5184
#	Harper, John W	El Dorado	
ORS	Hartmann, Ernest R	619 West Grove, El Dorado 71730	863-5146
FP	Hill, Grady E., Jr	427 West Oak, El Dorado 71730	863-7158
GE	Jones, Steve A.	714 West Faulkner, El Dorado 71730	862-5184
R	Jucas, Diana T	Post Office Box 506, El Dorado 71730	864-3371
D	Jucas, John J	525 West Faulkner, El Dorado 71730	862-5485

Type of Practice	Member's Name	Address	Telephone Number
R	King, Billy D	403 West Oak, El Dorado 71730	862-9969
FP	Klein, Kendel L.	Post Office Box 565, Strong 71765	797-7620
OPH	Landers, Gardner H.	318 Thompson, El Dorado 71730	862-4216
FP	Maud, Patricia A	490 West Faulkner, El Dorado 71730	863-2381
RD	McKinney, J. Schuler	2210 North Madison, El Dorado 71730 (Res.)	862-2626
GS	Menendez, Moises A	815 Thompson, El Dorado 71730	862-3411
FP	Moore, Berry L., Jr	490 West Faulkner, El Dorado 71730	862-2489
GS	Moore, John H.	815 Thompson, El Dorado 71730	862-3411
U	Murtee, Robert M.	619 North Newton, El Dorado 71730	862-5439
IM	Parker, A. Wade	714 West Faulkner, El Dorado 71730	862-5184
R	Parkman, Robert L., Jr	460 West Oak, El Dorado 71730	863-2253
OTO	Pillsbury, Richard C.	613 Thompson, El Dorado 71730	863-0010
AN	Pinkerton, Raymond E.	700 West Grove, El Dorado 71730	864-3484
IM	Pirnique, Allan S	714 West Faulkner, El Dorado 71730	862-5184
OBG	Ratcliff, John B.	704 West Grove, El Dorado 71730	863-8444
RD	Rogers, Henry B	110 Shadyside, El Dorado 71730 (Res.)	862-1905
D	Sample, Dorothy C.	525 West Faulkner, El Dorado 71730	862-5485
R	Schultz, Wayne H.	305 North Washington, El Dorado 71730	862-5100
GS	Scurlock, William R	815 Thompson, El Dorado 71730	862-3411
GP	Seale, James E., Jr.	701 West Oak, El Dorado 71730	863-7154
FP	Sheppard, James M	209 Thompson, El Dorado 71730	862-1211
FP	Smart, Gregory S	704 West Grove, Suite 6, El Dorado 71730	864-0333
FP	Smith, George W.	704 West Grove, Suite 2, El Dorado 71730	862-7661
AN	Stevens, Willis M., Jr.	403 West Oak, Suite 105, El Dorado 71730	863-9303
PD	Sykes, James D	403 West Oak, Suite 305, El Dorado 71730	862-2552
FP	Sykes, Robert R	403 West Oak, Suite 204, El Dorado 71730	862-5571
GYN	Talley, H. Aubry	403 West Oak, Suite 101, El Dorado 71730	862-0150
R	Tempey, Craig	460 West Oak, El Dorado 71730	863-2253
OBG	Thibault, Frank G., Sr	427 West Oak, El Dorado 71730	862-5403
GS	Tommey, C. E.	815 Thompson, El Dorado 71730	862-3412
GS	Tommey, Robert C.	815 Thompson, El Dorado 71730	862-3411
RD	Turnbow, R. L.	1905 West Elm, El Dorado 71730 (Res.)	
TR	Vasan, Srini	503 North Thompson, El Dorado 71730	864-0318
PD	Vyas, Dileep R.	403 West Oak, #301, El Dorado 71730	862-7900
FP	Warren, George W	Post Office Box W, Smackover 71762	725-3471
IM	Weedman, James B	714 West Faulkner, El Dorado 71730	862-5184
OPH	Williamson, John R.	318 Thompson, El Dorado 71730	862-4216
IM	Wilson, Larkin M., Jr.	714 West Faulkner, El Dorado 71730	862-5184
OTO	Wise, Jean F.	615 West Grove, El Dorado 71730	862-7918
NEP	Wu, William	700 West Faulkner, El Dorado 71730	863-5563
GS	Yocum, David M., Jr	310 Armstrong Building, El Dorado 71730	863-4177
ONC	Zahniser, Donna J.	615 Thompson, El Dorado 71730	862-0532

VAN BUREN COUNTY

GP	Hall, John A.	Post Office Box 310, Clinton 72031	745-2111
GP	Pearce, C. G.	Post Office Box 51, Clinton 72031	745-2412
#	Read, Paul S	Fairfield Bay	
RD	Stuteville, Orion H	Route 1, Box 307, St. Joe 72675 (Res.)	439-2555

WASHINGTON COUNTY

D	Albright, Spencer D., III	1925 Green Acres Road, Fayetteville 72701	443-3413
GS	Alston, John D	504 West Emma, Springdale 72764	751-3202
GP	Applegate, C. Stanley, Jr.	220 Meadow Avenue, Springdale 72764	751-4637
ORS	Arnold, James A.	Post Office Box 1988, Fayetteville 72702	443-0033
RD	Baggett, Jeff J.	Post Office Box 233, Prairie Grove 72753 (Res.)	846-2312
OTO	Baker, C. Murl, Jr	4255 Venetian Lane, Fayetteville 72701	521-1238
FP	Baker, Donald B	241 West Spring, Fayetteville 72701	521-8260
PS	Beckman, James S., Jr	3000 Market, Suite E, Fayetteville 72701	443-7771
RD	Bond, Walter M	1718 Furman, Fayetteville 72703 (Res.)	443-3666
GP	Box, Ivan H	Post Office Box 1049, Huntsville 72740	738-2115
PTH	Boyce, John M	607 West Maple, Springdale 72764	751-5711, Ext. 261
U	Brandon, Henry B	1041 Wendy Brooke Lane, Fayetteville 72703 (Res.)	442-9275
RD	Brooks, W. Ely	894 Farm Quarter Road, Mt. Pleasant, South Carolina 29464	
OPH	Brown, Craig J	Post Office Box 1834, Fayetteville 72702	521-5931
FP	Buckley, Carie D., Jr	Post Office Box 959, Fayetteville 72702 (Res.)	443-5677
OS	Burnside, Wade W., Jr.	600 North Razorback Road, Fayetteville 72701	575-4451
CD	Butler, G. Harrison	675 Lollar Lane, Fayetteville 72701	521-8200
CD	Carver, Joel D.	Post Office Box 186, Springdale 72765	756-9185
R	Cherry, James F.	607 West Maple, Springdale 72764	751-5711
#	Clark, P. LeMon	Fayetteville	
ORS	Coker, Tom P.	Post Office Drawer 1608, Fayetteville 72702	521-2752
P	Cole, Don H.	4171 Crossover Road, Suite H, Fayetteville 72703	521-0680
OBG	Cole, George R., Jr	740 Lollar Lane, Fayetteville 72701	521-4433
GP	Cook, Joel P.	2226 Golden Oaks, Fayetteville 72703 (Res.)	443-7010
**FP	Cooper, James B	241 West Spring, Fayetteville 72701	521-8260
OBG	Councille, Clifford C., Jr.	1011 North College, Fayetteville 72701	442-9809
AN	Covey, M. Carl	1609 Furman, Fayetteville 72703	736-8699
AN	Crawford, Perry F	Post Office Box 1621, Fayetteville 72702	521-8843
**FP	Crider, James T.	241 West Spring, Fayetteville 72701	521-8260
NEP	Crittenden, David R	100-A East Poplar, Fayetteville 72701	442-5295
OTO	Crocker, Thermon R	4255 Venetian Lane, Fayetteville 72701	521-1238
**FP	Crosby, Tommy R.	241 West Spring, Fayetteville 72701	521-8260
N	Davis, David A.	3000 Market, Suite C, Fayetteville 72701	442-4070
PD	Decker, Harold A	209 East Dickson, Fayetteville 72701	443-3471
AN	Dodson, C. Dwight	Post Office Box 1607, Fayetteville 72702	443-3387
RD	Dorman, John W	2000 Pin Oak Drive, Springdale 72764 (Res.)	
N	Dow, R. W.	3000 Market, Fayetteville 72701	442-4070
IM	Duncan, Philip E	675 Lollar Lane, Fayetteville 72701	521-8200
GS	Eck, Gareth	Post Office Drawer A, Fayetteville 72702	521-3300
RD	Edmondson, C. T.	Route 2, Box 473-E, Heber Springs 72543 (Res.)	362-2055
U	Fairchild, William V	2101 Green Acres Road, Fayetteville 72701	521-9166
OTO	Fincher, G. Glen	2100 Green Acres Road, Fayetteville 72703	521-0455
CD	Fish, Ted J.	100-A East Poplar, Fayetteville 72701	442-5295
ORS	Garbutt, Leopold H.	Post Office Box 1790, Springdale 72765	751-6383
RD	Gardner, Buford M.	897 Crossover Road, Fayetteville 72701 (Res.)	443-3174
D	Ginger, John D	102 West Dickson, Fayetteville 72701	521-2525
**FP	Gray, Dalton L., II	241 West Spring, Fayetteville 72701	521-8260
R	Greenhaw, James J.	Post Office Box 36, Siloam Springs 72761	524-4141
R	Hackler, Keith	Post Office Box 1286, Fayetteville 72702	521-6480
CD	Haisten, James A. S.	Post Office Box 186, Springdale 72765	756-9185
IM	Hall, Joe B.	675 Lollar Lane, Fayetteville 72701	521-8200
R	Harris, Murray T.	Post Office Box 1286, Fayetteville 72702	521-6480
ORS	Harris, W. Duke	Post Office Drawer 1608, Fayetteville 72702	521-2752
OBG	Harrison, William F.	1011 North College, Fayetteville 72701	442-9809
FP	Hart, Hamilton R	767 West North, Fayetteville 72701	521-3600
RD	Hathcock, P. Loyce	909 Hall Avenue, Fayetteville 72701 (Res.)	442-4424

Type of Practice	Member's Name	Address	Telephone Number
PD	Haynes, James E.	207 East Dickson, Fayetteville 72701	443-3471
ONC	Hayward, Malcolm L , Jr	675 Lollar Lane, Fayetteville 72701	521-8200
ORS	Heinzelmann, Peter R	Post Office Drawer 1608, Fayetteville 72702	521-2752
RD	Henry, L Murphey	1314 West Ridgeway, Fayetteville 72701 (Res)	442-9366
RD	Henry, Louise M	1314 West Ridgeway, Fayetteville 72701 (Res)	442-9366
OPH	Henry, Morriss M	204 South East Street, Fayetteville 72701	442-5227
IM	Higginbotham, Hugh B	675 Lollar Lane, Fayetteville 72701	521-8200
A	Hutson, Martha	2100 Green Acres Road, Fayetteville 72701	521-3363
CD	Inlow, Charles W	Post Office Box 186, Springdale 72765	756-9185
P	Jarvis, Fred D , Jr	219 South Thompson, Springdale 72764	751-7052
IM	Johnson, Stephen P	675 Lollar Lane, Fayetteville 72701	521-8200
GS	Kendrick, John H	Post Office Box 1519, Springdale 72765	751-3202
A	Koehn, Laura J	2100 Green Acres Road, Fayetteville 72701	521-3363
**FP	Lacy, Hilton R	241 West Spring, Fayetteville 72701	521-8260
#	Lawson, Wilbur G	Fayetteville	
RD	Lesh, Ruth E	356 North Washington, Fayetteville 72701 (Res)	442-2163
RD	Lesh, Vincent O	356 North Washington, Fayetteville 72701 (Res)	442-2163
	Lesniak, James L	Boca Raton, Florida	
PTH	Litton, Eva W	2520 Stanton Avenue, Fayetteville 72701 (Res.)	521-5690
OBG	Lushbaugh, Harmon	740 Lollar Lane, Fayetteville 72701	521-4433
GS	Magness, C R	2059 Green Acres Road, Fayetteville 72701	521-1484
FP	Markland, Linda A	241 West Spring, Fayetteville 72701	521-8260
GE	Martin, William C	675 Lollar Lane, Fayetteville 72701	521-8200
OBG	Mashburn, James D	207 East Dickson, Fayetteville 72701	442-5377
RD	McAlister, Joseph H	Route 4, Box 188, Huntsville 72740 (Res)	665-2767
RD	McAllister, Max F	212 Balboa Avenue, Brownsville, Texas 78520	
PS	McCutcheon, Frank B , Jr	3000 Market, Suite E, Fayetteville 72701	443-7771
OPH	McDonald, J E., II	461 East Township Road, Fayetteville 72703	521-2555
GP	McEvoy, Francis E	803 Quandt, Springdale 72764	751-9236
**FP	McGowan, William	241 West Spring, Fayetteville 72701	521-8260
IM	Merritt, James M	2700 American Drive, Springdale 72764	756-0412
CDS	Miller, Charles H	Post Office Drawer A, Fayetteville 72702	521-3300
R	Mills, William C , III	Post Office Box 1286, Fayetteville 72702	521-6480
EM	Mire, Louis E	1125 North College, Fayetteville 72701	442-1105
IM	Moore, Arthur F.	675 Lollar Lane, Fayetteville 72701	521-8200
ORS	Moore, James F	Post Office Drawer 1608, Fayetteville 72702	521-2752
P	Moritz, Timothy B	4253 Crossover Road, Fayetteville 72703	521-5731
GS	Murry, J. Warren	Post Office Drawer A, Fayetteville 72702	521-3300
PTH	Nettleship, Mae B.	Post Office Box 817, Fayetteville 72702	443-3050
IM	Painter, Monroe B	675 Lollar Lane, Fayetteville 72701	521-8200
ORS	Park, John P	Post Office Drawer 1608, Fayetteville 72702	521-2752
OPH	Parker, Joe C.	700 South Young, Springdale 72764	751-1028
FP	Parker, Lee B , Jr	241 West Spring, Fayetteville 72701	521-8260
FP	Patrick, James K	241 West Spring, Fayetteville 72701	521-8260
GS	Petrino, Robert A	Post Office Box 1519, Springdale 72765	751-3202
U	Pickett, James D	Route 9, Box 219, Fayetteville 72701	521-8980
GP	Power, John R	220 Meadow, Springdale 72764	751-4637
FP	Proffitt, Danny L	241 West Spring, Fayetteville 72701	521-8269
GYN	Rabon, Nancy A	1460 North College, Fayetteville 72703	442-8261
R	Riddick, Earl B , Jr	Post Office Box 1286, Fayetteville 72702	521-6480
R	Riner, Dan M	607 Maple, Springdale 72764	751-5711
FP	Rogers, David L	767 West North, Fayetteville 72701	521-3600
OBG	Romine, James C.	740 Lollar Lane, Fayetteville 72701	521-4433
NS	Runnels, Vincent B.	3000 Market, Suite D, Fayetteville 72703	521-0900
FP	Sexton, G A	Post Office Box 4275, Fayetteville 72702	521-5894
U	Shaddox, T Stephen	1300 Zion Road, Fayetteville 72701	521-8980
OPH	Sharp, Jim D	102 West Dickson, Fayetteville 72701	521-4949
RD	Siegel, Lawrence H.	233 Oakwood, Fayetteville 72703 (Res.)	442-2083
OPH	Singleton, E Mitchell	Post Office Box 908, Fayetteville 72702	521-4843
IM	Sisco, Charles P	Post Office Box 65, Springdale 72765	751-4579
GP	Smith, Austin C.	Post Office Box 1049, Huntsville 72740	738-2115
P	Stilwell, R Bronson	Post Office Box 357, Fayetteville 72702	521-5076
GE	Tice, Howard L.	100-A East Poplar, Fayetteville 72701	442-5295
FP	Titus, Janet L	Post Office Box 215, Winslow 72959	634-7071
FP	Tuttle, Larry D	22 East Spring, Fayetteville 72701	443-3417
FP	Vinzant, John W	22 East Spring, Fayetteville 72701	443-3417
FP	Waller, Franklin W	1124 West Pullen, Pine Bluff 71601	535-2880
R	Ward, H. Wendell	Post Office Box 1786, Fayetteville 72702 (Res)	521-6556
GP	Wheat, Ed	130 North Spring, Springdale 72764	751-5704
FP	Whiting, Tom D	803 Quandt, Springdale 72764	751-9236
GP	Wilson, Robert B , Jr	Post Office Box 509, Huntsville 72740	738-2115
GP	Wiseman, Eve J	117 East Sycamore, Fayetteville 72701	521-0200
GS	Wood, Jack A	Post Office Drawer A, Fayetteville 72702	521-3300
OPH	Wright, Walter L	Post Office Box 908, Fayetteville 72702	521-4843

WHITE COUNTY

FP	Baker, Ronald L.	2900 Hawkins Drive, Searcy 72143	268-5364
R	Bell, John E.	1300 South Main, Searcy 72143	268-8500
GS	Blue, Glen T	Post Office Box 159, Searcy 72143	268-2441
CD	Blue, Leon R	2900 Hawkins Drive, Searcy 72143	268-5364
GP	Boisvert, Craig S	Post Office Box 530, Des Arc 72040	256-4178
RD	Brown, A R.	6 River Oaks Trace, Searcy 72143 (Res)	268-2545
FP	Citty, Jim C.	2900 Hawkins Drive, Searcy 72143	268-5364
FP	Collier, Steven F	Post Office Box 277, Augusta 72006	347-2508
IM	Covey, David C.	2900 Hawkins Drive, Searcy 72143	268-5364
FP	Davidson, Daniel S.	1300 South Main, Searcy 72143	268-3232
GP	Edwards, Hugh R	1300 South Main, Searcy 72143	268-5361
R	Elliott, Robert E	1300 South Main, Searcy 72143	268-8500
	Farrar, Henry C	Nigeria, Africa	
IM	Fincher, Clark	2900 Hawkins Drive, Searcy 72143	268-5364
FP	Formby, Thomas A	2900 Hawkins Drive, Searcy 72143	268-5364
OBG	Gardner, Jack R	2900 Hawkins Drive, Searcy 72143	268-5364
GS	Gibbs, William M., III	2900 Hawkins Drive, Searcy 72143	268-5364
PTH	Golleher, James H	Post Office Box 1128, Searcy 72143	268-7186
ORS	Green, Terry G	1302 South Main, Searcy 72143	268-8677
OTO	Hatfield, David L	302 West Center, Searcy 72143	268-4548
CD	Henderson, John C.	Post Office Box 77, Searcy 72143	268-7557
GP	Jackson, Clarence W	Post Office Box 517, Judsonia 72081	729-3435
IM	Johnson, David M	2900 Hawkins Drive, Searcy 72143	268-5364
FP	Joseph, Eugene A	1300 South Main, Searcy 72143	268-7143
FP	Justus, Michael G	2900 Hawkins Drive, Searcy 72143	268-5364
FP	Killough, Larry R	#57 Country Club Circle, Searcy 72143 (Res)	268-8384
FP	Kinley, J Garrett	Post Office Box D-2, Beebe 72012	882-3388
FP	Koch, Clarence W , Jr.	1304 South Main, Searcy 72143	268-5845
PD	Lewis, James S.	1300 South Main, Searcy 72143	268-0707

Type of Practice	Member's Name	Address	Telephone Number
OPH	Lowery, Benjamin R	408 West Vine, Searcy 72143	268-7154
OPH	Lowery, Robert D	408 West Vine, Searcy 72143	268-7154
GP	Maguire, F C, Jr	Post Office Box 500, Augusta 72006	347-2131
P	McAfee, Dewey R	101 Windwood Drive, Beebe 72012	882-5433
ORS	McCoy, James R	302 West Center, Searcy 72143	268-4168
U	Meacham, Kenneth R	1300 South Main, Suite 103, Searcy 72143	268-4313
U	Miedema, Edward B.	1300 South Main, Searcy 72143	268-4313
OPH	Nevins, William H	Post Office Box 1054, Searcy 72143	268-2201
FP	Norris, E Lloyd	Post Office Box D-2, Beebe 72012	882-3300
FP	Ransom, Clarence E., Jr	1407 East Race, Searcy 72143	268-5845
D	Rasberry, R D	Post Office Box 177, Searcy 72143	268-4322
GS	Rodgers, Porter R, Jr.	Post Office Box 159, Searcy 72143	268-2441
GS	Sanders, John K	2900 Hawkins Drive, Searcy 72143	268-5364
ORS	Schwartz, Stanley S	2900 Hawkins Drive, Searcy 72143	268-5364
GP	Short, W Harold	Post Office Box 340, Beebe 72012	882-5561
GS	Simpson, James A	1300 South Main, Searcy 72143	268-2441
GP	Smith, Bernard C	Post Office Drawer C, Bradford 72020	344-2788
N	Smith, Bob W	Post Office Box 858, Searcy 72143	268-9815
FP	Staggs, David L	1300 South Main, Searcy 72143	268-3232
PD	Stinnett, J L	2900 Hawkins Drive, Searcy 72143	268-5364
FP	Tate, Sidney W	2900 Hawkins Drive, Searcy 72143	268-5364
CD	Weathers, Larry W	Post Office Box 20, Searcy 72143	268-9869
IM	White, William D	2900 Hawkins Drive, Searcy 72143	268-5364
R	Williams, W Curtis	1300 South Main, Searcy 72143	268-8500

WOODRUFF COUNTY

GP	Hendrixson, Basil E.	Post Office Box 1010, McCrory 72101	731-5525
FP	Rowe, James E	Post Office Box 387, McCrory 72101	731-2511

YELL COUNTY

R	Berry, William L.	Post Office Box 59, Dardanelle 72834	229-4891
RD	Bull, L J	Plainview 72857	272-4757
RD	Draeger, Louis A	Post Office Box 716, Danville 72833 (Res.)	495-2770
GP	Harris, Walter P.	Post Office Box 490, Danville 72833	495-2714
EM	Hodges, Jerry F.	414 West Street, Dardanelle 72834 (Res.)	967-6211
FP	Luker, Jerome H	Post Office Box 337, Dardanelle 72834	229-4172
GP	Martin, Damon G H	Post Office Box 328, Ola 72853	489-5801
ADM	Maupin, James L.	Post Office Box 2607, Fort Smith 72902	785-2471
GP	Pennington, James O	Post Office Box 68, Ola 72853	489-5241
FP	Ring, Gene D	Post Office Box 337, Dardanelle 72834	229-4172
FP	Russell, Gary W	Post Office Box 337, Dardanelle 72834	229-4172

MEMBER-AT-LARGE

Bissada, Nabil K.	Riyadh, Saudi Arabia	

CODES FOR TYPE OF PRACTICE

A	Allergy
ADM	Administrative Medicine
AN	Anesthesiology
CD	Cardiovascular Diseases
CDS	Cardiovascular Surgery
CHP	Child Psychiatry
CRS	Colon and Rectal Surgery
D	Dermatology
EM	Emergency Care
END	Endocrinology
FP	Family Practice
GE	Gastroenterology
GER	Geriatrics
GP	General Practice
GPM	General Preventive Medicine
GS	General Surgery
GYN	Gynecology
HEM	Hematology
IM	Internal Medicine
NEP	Nephrology
N	Neurology
NM	Nuclear Medicine
NS	Neurological Surgery
OBS	Obstetrics
OBG	Obstetrics and Gynecology
OM	Occupational Medicine
ONC	Oncology
OPH	Ophthalmology
ORS	Orthopaedic Surgery
OT	Otology
OTO	Otorhinolaryngology
P	Psychiatry
PD	Pediatrics
PDA	Pediatric Allergy
PDC	Pediatric Cardiology
PDS	Pediatric Surgery
PH	Public Health
PM	Physical Medicine and Rehabilitation
PS	Plastic Surgery
PTH	Pathology
PUD	Pulmonary Diseases
R	Radiology
RHU	Rheumatology
TR	Therapeutic Radiology
TS	Thoracic Surgery
U	Urology
OS	Other Specialty
RD	Retired
*	Intern
**	Resident
+	Medical Student
#	Deceased

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Hass, Farrell D.
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Langston, Tom A.
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McElroy, Kellye C.
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McKnight, Robert A.
McNair, Bob
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Newton, James A., Jr.
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Nguyen, Luat T.
Nguyen, Thanh B
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Norris, L. Parker
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Norys, James W.
Nunnally, Kent
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Pippenger, Mark A.
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Roberts, Kevin D
Robertson, Ronald D
Rodgers, Kenneth F
Ross, Mark S.
Rothrock, Perry C., III
Russell, Anthony E.
Russell, Roy E.
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Schmidt, Alec H
Schmucker, Nancye K.
Scroggins, Larry A.
Sharp, Jan C.
Sharp, Richard B.
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Short, Luke H
Shotts, Joe F.
Silkensen, John R.
Simpson, Joseph E.
Sinor, Elicia A.
Sitz, Karl V
Skidmore, Grant A.
Smith, Barry J.
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Fort Smith, Arkansas 72902
Phone: 782-8218
WATS: 1-800-542-1058

Little Rock Office:
750 Plaza West Building
415 North McKinley
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Phone: 663-4475

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Legal Counsel
Mr. Michael W. Mitchell
Post Office Box 1510
Little Rock, Arkansas 72203
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Ben N. Saltzman, M.D., Director
4815 West Markham
Little Rock, Arkansas 72205
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Phone: 578-2448

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Phone: 378-5981

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500 South University, Suite 311
Little Rock, Arkansas 72205
Phone: 664-3402

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Arkansas Medical Society	Thursday, April 17 — Sunday, April 20, 1986, Excelsior Hotel, Little Rock Thursday, April 23 — Sunday, April 26, 1987, Hilton Hotel, Fayetteville Thursday, April 21 — Sunday, April 24, 1988, Excelsior Hotel, Little Rock	
American Medical Association House of Delegates	Annual Meeting June 15-19, 1986	Chicago
	Interim Meeting December 7-10, 1986	Las Vegas
	Annual Meeting June 21-25, 1987	Chicago
	Interim Meeting December 6-9, 1987	Atlanta
American Medical Association Leadership Conference	February 20-22, 1986	Marriott Hotel Chicago

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MALVERN. Population 10,163; trade area population 26,918. Malvern is located in central Arkansas, 45 miles southwest of Little Rock. No orthopaedic surgeons or pediatricians currently practice in Malvern. Opportunities exist to establish a solo practice with assistance from a hospital sponsored start-up contract. Office space is available in the hospital owned clinic adjacent to the 77-bed county hospital. Malvern has an excellent school system with an enrollment of 2,969, a country club with a nine-hole golf course, and numerous civic clubs.

BLYTHEVILLE. Blytheville has a population of approximately 25,000 with a trade area population approximately 70,000-100,000. Blytheville is located in northeast Arkansas approximately 60 miles north of Memphis, Tennessee on Interstate 55. There is a definite need for another pediatrician. Although there are two full-time pediatricians in Blytheville, approximately one-third to one-half of the pediatric care occurs outside the Blytheville area. One of the pediatricians is interested in obtaining an associate immediately.

BRINKLEY. Opportunities exist in Brinkley in family practice and internal medicine. Population 5,700; service area population 30,000. Brinkley is located on Interstate 40 midway between Little Rock and Memphis, Tennessee.

The offering includes guaranteed income for the first year at professional rates competitive with Little Rock and Memphis. Moving expenses will also be paid. Currently there are five family or general practice physicians located in Brinkley.

The Delta Medical Center was acquired by Community Care Systems, Inc., in 1983. A 28-bed nursing home is at the same location. The hospital serves the residents of Brinkley and draws patients from the entire county as well as parts of Prairie, St. Francis, Woodruff, and Lee Counties.

BULL SHOALS. Opportunities to practice in Bull Shoals include general and family practice, pediatrics, internal medicine, urology, dermatology, and ophthalmology. The 48-bed Bull Shoals Community Hospital is a full service facility built in 1975 and includes a 4-bed CCU unit with excellent ancillary services. Laboratory includes tissue lab, a complete respiratory service and a well staffed and equipped physical therapy department. Ambulance and home health services are also provided. Fully equipped clinic space is available with financial arrangements tailored to meet the physician's needs. Other area hospitals include the 59-bed Central Ozarks Medical Center 15 miles south in Yellville and the Baxter County Regional Hospital with 133 beds located 15 miles east in Mountain Home.

Located in the Ozark Mountains, Bull Shoals is in the middle of a vacation mecca. The community population is 1,312 with a service area population of 15,000. Two of the most popular lakes in Mid-America, Bull Shoals and Norfolk are nearby.

FORREST CITY. Forrest City is located on Interstate 40, 45 miles from Memphis, Tennessee and 90 miles from Little Rock. Population approximately 13,000; trade area population approximately 70,000. There are currently two opportunities for practice in Forrest City. The opportunity exists for a family practitioner to join two established family practitioners. An initial salary position exists as an option. There is a full service, 100-bed hospital with 17 physicians on the active medical staff. A new 118-bed replacement facility will be completed in July 1985.

CHEROKEE VILLAGE. Population 4,500, county population of 14,600, Cherokee Village is located in the scenic foothills of the Ozark Mountains. Opportunity exists for a general surgeon and financial arrangements will be tailored to the needs of the physician. There are currently 3 family physicians in the community. The Baptist Memorial Hospital—Eastern Ozarks has 10 acute care beds and 60 long-term care beds. The hospital has a well-equipped emergency room and a comprehensive range of support services including radiology, dietary, laboratory and pharmacy. Tertiary care and continuing medical education are located an hour away in Jonesboro which is the regional medical center for northeast Arkansas.

For more information contact the Physician Placement Service, Arkansas Medical Society, Post Office Box 1208, Fort Smith, Arkansas 72902.

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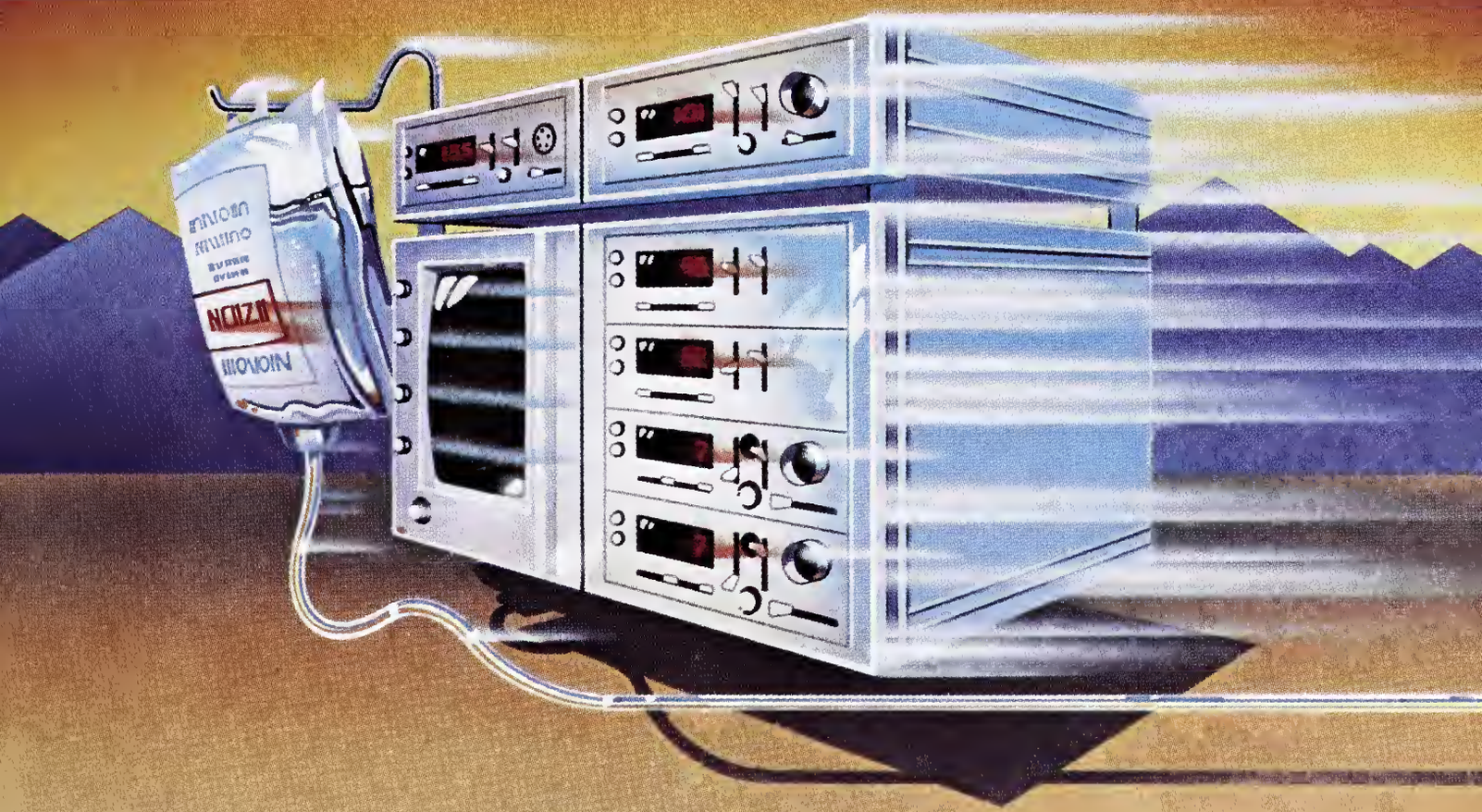
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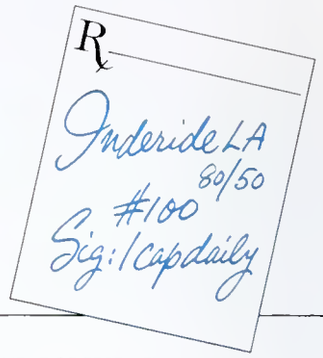
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BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)*

INDERIDE® LA Brand of **PROPRANOLOL HYDROCHLORIDE (INDERAL® LA) and HYDROCHLOROTHIAZIDE (Long Acting Capsules)**

No. 455—Each INDERIDE® LA 80/50 Capsule contains	
Propranolol hydrochloride (INDERAL® LA)	80 mg
Hydrochlorothiazide	50 mg
No. 457—Each INDERIDE® LA 120/50 Capsule contains	
Propranolol hydrochloride (INDERAL® LA)	120 mg
Hydrochlorothiazide	50 mg
No. 459—Each INDERIDE® LA 160/50 Capsule contains	
Propranolol hydrochloride (INDERAL® LA)	160 mg
Hydrochlorothiazide	50 mg

INDERIDE LA is indicated in the management of hypertension.

This fixed-combination drug is not indicated for initial therapy of hypertension. If the fixed combination represents the dose titrated to the individual patient's needs, therapy with the fixed combination may be more convenient than with the separate components.

CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL®):

Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide:

Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL®):

CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned, the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patients should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide:

Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL®):

GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease; elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide:

GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance: namely, Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS. Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL®):

Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure, intensification of AV block, hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness; mental depression manifested by insomnia, lassitude; weakness; fatigue; reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation; mesenteric arterial thrombosis; ischemic colitis.

Allergic: Pharyngitis and agranulocytosis; erythematous rash; fever combined with aching and sore throat; laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis; nonthrombocytopenic purpura; thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia; LE-like reactions; psoriasiform rashes; dry eyes; male impotence; and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal: Anorexia; gastric irritation; nausea; vomiting; cramping; diarrhea; constipation; jaundice (intrahepatic cholestatic jaundice); pancreatitis; sialadenitis.

Central Nervous System: Dizziness; vertigo; paresthesias; headache; xanthopsia.

Hematologic: Leukopenia; agranulocytosis; thrombocytopenia; aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura; photosensitivity; rash; urticaria; necrotizing angiitis (vasculitis, cutaneous vasculitis); fever; respiratory distress, including pneumonitis; anaphylactic reactions.

Other: Hyperglycemia; glycosuria; hyperuricemia; muscle spasm; weakness; restlessness; transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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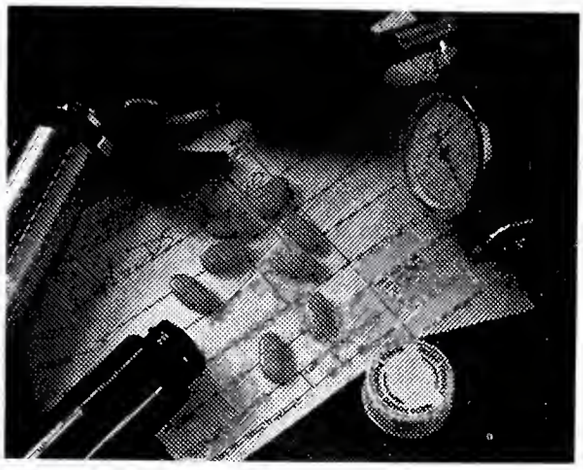
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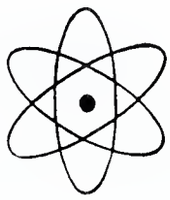
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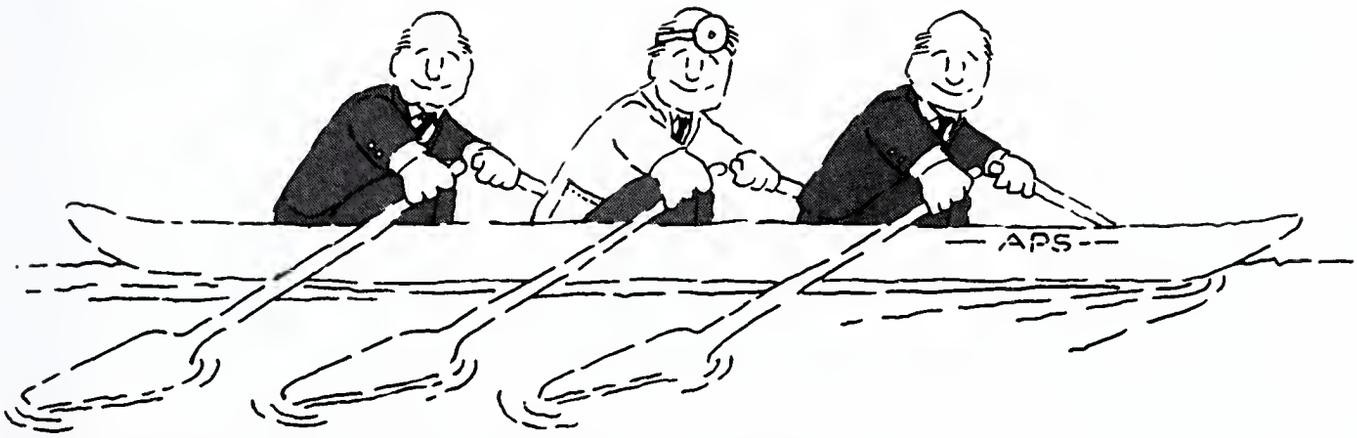
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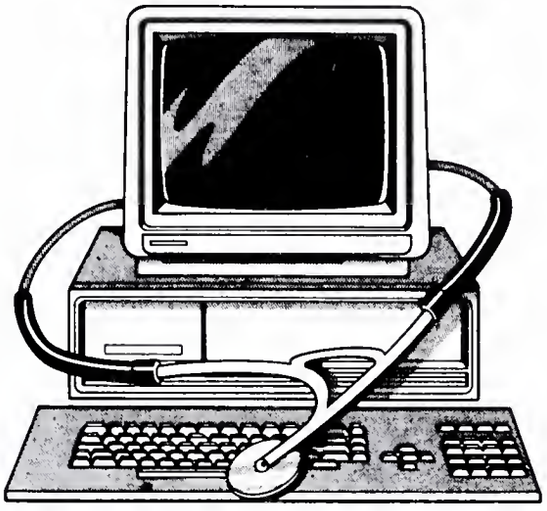
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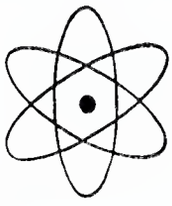
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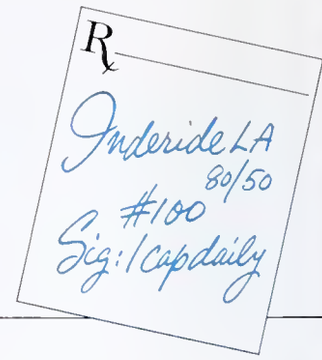
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Propranolol hydrochloride (INDERAL®):
Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide:
Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL®):
CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned, the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patients should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide:
Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL®):
GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease; elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide:
GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance: namely, hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs, irrespective of cause, are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS. Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL®):
Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation; mesenteric arterial thrombosis; ischemic colitis.

Allergic: Pharyngitis and agranulocytosis; erythematous rash, fever combined with aching and sore throat; laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis; nonthrombocytopenic purpura; thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia; LE-like reactions; psoriasiform rashes; dry eyes; male impotence; and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:
Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice), pancreatitis, sialadenitis.

Central Nervous System: Dizziness, vertigo, paresthesias, headache, xanthopsia.

Hematologic: Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura, photosensitivity; rash; urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis), fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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Brief Summary of Prescribing Information.

Indications and Usage: Management of anxiety disorders or short-term relief of symptoms of anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

Contraindications: Known sensitivity to benzodiazepines or acute narrow-angle glaucoma

Warnings: Not recommended in primary depressive disorders or psychoses. As with all CNS-acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

Physical and Psychological Dependence: Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addiction-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

Precautions: In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown; but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper G.I. disease. Safety and effectiveness in children under 12 years have not been established.

ESSENTIAL LABORATORY TESTS: Some patients have developed leukopenia, some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

CLINICALLY SIGNIFICANT DRUG INTERACTIONS: Benzodiazepines produce CNS depressant effects when administered with such medications as barbiturates or alcohol.

CARCINOGENESIS AND MUTAGENESIS: No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

PREGNANCY: Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chlordiazepoxide, diazepam and meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may be pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

NURSING MOTHERS: It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

Adverse Reactions, if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

Transient amnesia or memory impairment has been reported in association with the use of benzodiazepines.

Overdosage: In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

Ativan® (lorazepam) for Anxiety

DOSAGE: Individualize for maximum beneficial effects. Increase dose gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

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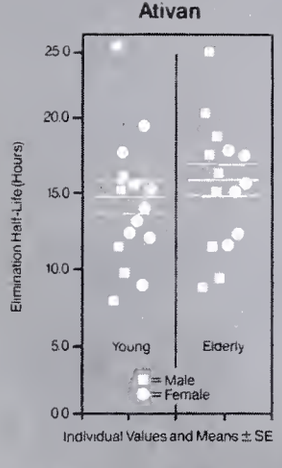
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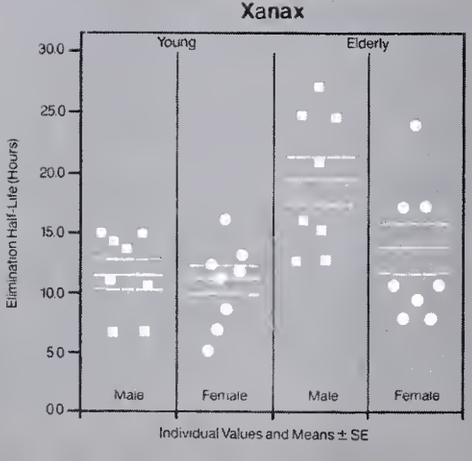
among leading benzodiazepines, has proof that its pharmacokinetics are not significantly altered by age.[1]

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Comparison of elimination half-lives in young and elderly subjects.



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References:
1. Greenblatt DJ: Clinical study, pharmacokinetics and bioavailability in the elderly, Ativan® (lorazepam). Data on file, Wyeth Laboratories.
2. Greenblatt DJ, Allen MD, Locniskar A, et al: Lorazepam kinetics in the elderly. Clin Pharmacol Ther 26:103, 1979.
3. Greenblatt DJ, Divoll M, Abernethy DR, et al Alprazolam kinetics in the elderly. Arch Gen Psychiatry 40:287, 1983.

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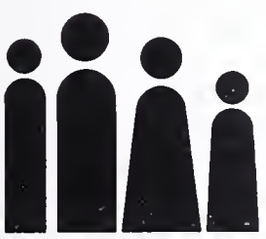
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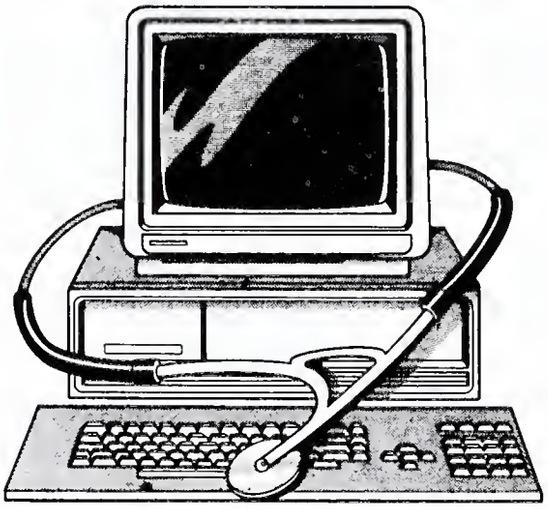
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Asymptomatic Carotid Disease
A Review

R. E. Casali, M.D., T. H. Hoffmann, M.D., and C. D. Williams, M.D.

Surgical treatment for hemispheric transient ischemic attacks attributed to extracranial carotid disease has become widely accepted; however, the management of patients with asymptomatic carotid lesions remains controversial. Stroke remains the fourth leading cause of death in the United States. More importantly, non-fatal strokes are frequently associated with severe chronic disabilities. Extracranial carotid disease accounts for 30-40% of strokes. Identification of these lesions could decrease the risk and incidence of strokes. One clinical sign, the cervical bruit, has long been used as a marker to identify patients with extracranial carotid disease. The purpose of this review is to correlate the reliability of carotid bruits in detecting patients with significant extracranial carotid disease. Also, other controversial aspects of asymptomatic carotid disease, i.e., ulcerated plaques, patients with cervical bruits undergoing major operative procedures, and the "natural history" of severely stenotic lesions will be discussed.

The Significance of Cervical Bruits

The first question that needs to be addressed is: How common are carotid bruits in the population at large? There are two prospective studies that address this issue. The Framingham Study[1] examined 5,184 men and women, ages 30-62 years, without any cerebrovascular symptoms, biannually. The incidence of a middle cervical bruit was 3.5% in the younger ages (44-54) and increased to 7% by age 79 years. The incidence of bruits was equal in men and women. Diabetes mellitus and/or hypertension increased the risk of bruits 3.5 times. After eight years of follow-up, there was a 2.6 times increase in stroke and transient ischemic attacks in patients with cervical bruits, as opposed to patients without cervical bruits. Cerebral infarction appropriate to the side of the bruit occurred in only one-third of the cases. The remainder of strokes were caused by opposite cerebral infarctions, cerebral emboli, subarachnoid hemorrhages, and lacunar infarctions. Myocardial infarction likewise occurred more frequently in patients with bruits. Overall, these findings demonstrate that men and women with cervical bruits have an increased death rate from cardiovascular diseases, and that a cervical bruit is a nonspecific sign of atherosclerosis.

The report by Heyman,[2] et al., performed in a rural community (Evans County, Georgia), a distant site from the above-mentioned Massachusetts Framingham Study, demonstrated similar findings. During a six-year period, patients with cervical bruits had a six-fold increase in stroke as compared to patients without bruits. However, again, only 30% of the stroke victims had cerebral infarctions ipsilateral to the carotid bruits. The remainder of strokes were from a variety of causes. These two important prospective studies clearly demonstrate that cervical bruits are associated with an increased death rate from vascular causes. Cervical bruits alone, however, are nonspecific and do not correlate with predicting future ipsilateral cerebral infarctions.

In reviewing the relationship between bruits and the presence of internal carotid stenosis, Imparato,[3] et al., examined 428 arteriographically visualized carotid arteries and found little correlation between the presence of carotid bruits and significant internal carotid stenosis. Thirty percent of patients with bruits had no internal carotid disease or less than 30% stenosis. Only 20% of total occlusions had bruits; and of the hemodynamic significant lesions (60-80% stenosis), only 50-70% of patients had bruits. Barnes,[4] in reviewing 440 patients undergoing major cardiovascular procedures, found 63% of bruits were not associated with significant carotid obstruction.

Reprint to: Robert E. Casali, M.D., 200 Medical Towers Bldg., Little Rock, Arkansas 72205.

Furthermore, in patients with significant carotid obstructions, only 27% had bruits.

These data demonstrate little correlation between cervical bruits and the presence of significant internal carotid obstructive disease. Therefore, the clinician should seek other means to identify patients with significant carotid lesions that pose an increased stroke risk.

Asymptomatic Carotid Ulcers and Risk of Stroke

The national history of asymptomatic carotid ulcerative disease is unclear, as there are no prospective data regarding this problem. Presumably, carotid ulcers are the site where platelets clump, become dislodged, and produce cerebral microemboli. Why some patients with ulcerative lesions have symptoms and others do not is unknown. Furthermore, the percentage of patients with asymptomatic ulcerative lesions that proceed to stroke without a warning TIA is also unknown.

In an attempt to answer these questions, Moore,[5] et al., retrospectively reviewed the University of California at San Francisco, and later the University of California at Los Angeles[6] experiences. He divided the lesions into three categories according to the size of the ulcer. An "A" ulcer was defined as a minimal excavation within an atherosclerotic plaque; a "B" ulcer also was defined as a larger obvious excavation within an atherosclerotic plaque; and a "C" ulcer was defined as having multiple cavities or possessing a cavernous appearance. At the end of six years of follow-up, the patients with "A" lesions had no increase in stroke rate, with 97% of the patients remaining free of stroke. There was a 15% incidence of stroke within the first year in the patients with "B" and "C" ulcers. Thereafter, these patients tended to remain stroke-free until the sixth year when the stroke rate seemed to increase; however, the number of patients at this point was too small to be significant. Stimulated by Moore's data, Bernstein,[7] et al., reviewed the University of California at San Diego material and found different risks of stroke. They likewise categorized their patients into "A" and "B" lesions. They excluded "C" lesions, as all of these patients underwent prophylactic endarterectomy. Similar to Moore's data, they found that patients with "A" lesions had a benign and symptom-free course without an increased risk of stroke. The difference in the two studies was in the "B" lesions where the University of San Diego group did not find an increased risk of stroke. At this point, these differences in the two studies cannot be reconciled. There are problems with both studies, in that they were retrospective, and therefore, the progression of the lesions was not serially studied. Furthermore, the mechanism or cause of stroke in these papers was not stated, or is not known, which further clouds the issue. Another aspect is that there is a significant, both intra- and inter-, observer variability in the angiographic interpretation of ulcerated lesions, making the diagnostic accuracy of ulcerated plaques about 75%.[8] In summary, it seems that asymptomatic patients with "A" and "B" lesions can be safely observed, and patients with "C" ulcers should undergo prophylactic endarterectomy, especially if the lesion is associated with a significant stenosis. More definitive answers on these problems await prospective trials.

The Risk of Stroke in Patients with Carotid Bruits Undergoing Major Cardiovascular Operations

It has been suggested that the risk of intraoperative stroke in patients with carotid bruits undergoing major cardiovascular operations is increased. This was thought to be due to hypotension and decreased cerebral perfusion occurring during the operative procedure. This hypothesis had led some surgeons to perform prophylactic carotid endarterectomies in these patients prior to their planned major procedures.[9] There are currently six published studies on this issue. Carney[10] retrospectively studied 248 patients undergoing aortoiliac reconstructive procedure. Thirty-five (14%) patients had carotid bruits. The overall stroke rate was 1.6%; however, none occurred in the patients with carotid bruits. Identical findings were reported by Trieman[12] in 516 patients undergoing abdominal aortic operations. Evans[11] and Cooperman[13] independently reviewed the data in patients undergoing a variety of vascular operations and found similar data. The problems with these three studies are that they were retrospective and that the degree of carotid disease was not known as bruits are not the only indicators of carotid disease and from the preceding discussion, it is clear that bruits are not good indicators of predicting the presence of significant carotid disease. To further clarify this issue, Barnes,[4] et al., prospectively screened 449 patients undergoing coronary (324) and PV (125) operations both for the presence of a bruit and the degree of carotid obstruction by noninvasive techniques. Interestingly, the percentage of patients with

carotid bruits was similar to Carney's data, i.e., 13% in patients with peripheral vascular disease. The risk of stroke was not increased both in the patients with bruits alone and in those with obstructive disease. Turnipseed,[14] et al., in a similar prospective study, i.e., using noninvasive screening techniques, found no direct correlation between bruits, severity of disease, and incidence of perioperative stroke. These studies clearly demonstrate that patients with asymptomatic carotid bruits may undergo major vascular operations without an increased stroke rate. Therefore, prophylactic carotid endarterectomy in these patients seems unnecessary.

Natural History of Patients with Significant Carotid Stenosis

Recent prospective data concerning this problem have demonstrated the seriousness of high-grade carotid stenosis, which refers to lesions in excess of 80% diameter stenosis. In evaluating this problem, Strandness,[15] et al., prospectively followed 162 patients with carotid bruits, by noninvasive duplex scanning. Twenty-four of these patients were found to have lesions in excess of 80% diameter stenosis. There was a 35% risk of ischemic symptoms or the ipsilateral carotid artery progressing to total occlusion within six months, and 46% chance of having similar problems within twelve months. Contrarily, patients with less than 80% stenosis had a 1.5% chance of developing complications. These prospective data clearly demonstrate the ominous prognosis of patients with high-grade carotid lesions. In addition, when progression in all categories of carotid stenosis was considered, 50% of the arteries showed some disease progression. Interestingly, Javi,[16] et al., demonstrated similar findings fifteen years ago using serial arteriography. This strongly suggests that patients with known carotid disease should have serial noninvasive tests performed to detect lesions when they approach the 80% diameter stenosis category.

Retrospective data from Busuttil[17] using the OPG to classify patients were similar to the data of Strandness. Patients with a positive OPG-Gee had a 16.4% stroke risk during follow-up as compared to a 1.9% in patients with a negative OPG-Gee (P .001). The OPG-Gee only detects flow reducing lesions with high-grade stenosis. Therefore, patients with high-grade carotid stenosis are at an increased stroke risk appropriate to the side of the carotid lesion.

Prognosis of Carotid Lesions Opposite Operated Arteries

There are at least five published papers[18-22] concerning this issue. Albeit, they are all retrospective studies, they remarkably show similar findings. The symptom rate, that is transient ischemic attacks, was about 15% at 30 months of follow-up, and furthermore, stroke rarely, if ever, preceded symptoms. This may be a different group of patients, however, in that having had one side surgically corrected and told of specific warning symptoms, these patients would more likely seek medical advice sooner. The other aspect is that these papers do not separate patients with high-grade stenosis, which again will be associated with an increased stroke rate.

Staged or Simultaneous Operative Therapy for Coexistent Carotid and Coronary Vascular Disease

Carotid endarterectomy in patients with coexistent carotid disease and symptomatic coronary disease poses a dilemma, as acute myocardial infarction is the most common cause of perioperative mortality. Conversely, coronary bypass surgery in patients with severe carotid stenosis may be associated with an increased stroke rate.[9] The problem revolves around which plan will yield the lowest stroke rate and operative mortality. The bulk of data thus published[4,14,31] suggests that patients with asymptomatic carotid stenosis may undergo coronary artery bypass surgery without an increased stroke rate, although there are no randomized studies concerning this matter. Depending upon the severity of disease in either system, i.e., coronary or carotid, the staged approach is preferred. One could repair one organ system, not necessarily discharge the patient from the hospital, and then correct the other lesion. An alternate approach is to perform simultaneous repairs of the carotid and coronary lesions. There are numerous published series stating the safety of combined coronary and carotid operations.[23-30] With the exception of the study by Brenner,[32] all of the other studies had an acceptable low stroke rate and operative mortality using the combined approach. However, this was not true in patients with significant bilateral carotid occlusive disease. These patients did have a marked increased stroke rate.[33-35] The combined approach seems most useful in treating patients with both symptomatic coexistent coronary and carotid disease, although

this combination of symptoms is relatively unusual.

Based on this data, the preferred approach in patients with significant but asymptomatic carotid disease undergoing coronary artery bypass surgery is to perform staged procedures whenever possible. In the uncommon occurrence of both simultaneous coexistent symptomatic carotid and coronary disease, the combined approach may be used. In patients with significant bilateral carotid occlusive disease and coronary disease, again, the staged approach, if at all possible, would be preferable.

Summary

As reviewed in this report, there are many aspects of asymptomatic carotid disease. Most issues remain controversial, as there is little prospective data on which to base recommendations. However, prospective data are available concerning severely stenotic extracranial carotid disease and have demonstrated the ominous prognosis of these lesions. Identification of these patients is important and cannot be based on auscultation for carotid bruits alone. Other aspects such as the presence of vascular disease elsewhere in the body, hypertension, a positive history for smoking, and a strong family history for vascular disease should alert the clinician that these patients have an increased stroke rate and death rate. Therefore, further screening of these patients should be performed with noninvasive tests which are about 95% accurate in detecting significant carotid disease. We have utilized the duplex scan for this purpose, and when significant carotid lesions are identified, arteriograms are recommended, followed by appropriate operative therapy. Therefore, the use and availability of noninvasive tests are very important in the management of patients with possible carotid disease. The same concept can be used for most other aspects of asymptomatic carotid disease and especially in the surveillance of patients with known carotid disease. All patients with known carotid disease should have serial noninvasive tests yearly to detect progression of the disease, as a high percentage of lesions become worse. The management of ulcerative carotid disease remains controversial because of the lack of prospective data concerning the natural history of these lesions. However, based on current knowledge, most asymptomatic carotid ulcerative plaques can be safely followed except for the "C" lesions which tend to be associated with an increased stroke rate.

Another important aspect entering the decision-making process in treating asymptomatic carotid patients is that surgical treatment for this disease should be offered to patients only if the known operative stroke rate for a particular surgical team is less than 1%. This low operative stroke rate is mandatory in "prophylactic" operations.

Most patients with asymptomatic carotid disease not operated on are placed on antiplatelet therapy. The merits and disadvantages of this regimen have been discussed at length and are beyond the scope of this report. Briefly, it appears that "low dose aspirin" (300 milligrams daily) with or without dipyridamole is the most common treatment plan. If this will affect the long-term course of this disease in asymptomatic patients is unknown.

This report has dealt entirely with the course and management of asymptomatic carotid disease, which does not necessarily apply to patients with symptoms. Specifically, patients with hemispheric symptoms should undergo prompt and appropriate evaluation.

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Psychiatric Manifestations of Myotonic Dystrophy:

Case Report of a Family and Literature Review

Fereydoun Dehkharghani, M.D.,* Farangis Dehkharghani, M.D.,* Lee Archer, M.D.,** and Jarlath Mitchell, M.D.***

ABSTRACT

The case report of an adolescent with myotonic dystrophy, who developed behavioral changes and progressive academic decline, is presented. A review of the literature regarding the impairment of higher cortical functions in this disorder, reveals a failure until recently to recognize psychiatric disturbances as a primary manifestation of this disease. More attention should be directed toward this feature of myotonic dystrophy, both on a case-by-case basis and in future investigations.

INTRODUCTION

Myotonic dystrophy (dystrophia myotonia), the most common muscular dystrophy of adults, is an autosomal dominantly inherited disorder characterized mainly by myotonia, distal weakness, and progressive muscular atrophy.[1,2] Although usually classified as a form of muscular dystrophy, it is distinct among them in that many tissues and organs of the body other than skeletal muscle are affected. The affected organs and tissues include smooth muscle,[3,4] the endocrine system,[7,8] the eyes,[9,10] the cardiovascular system,[5,6] the peripheral,[28,29] and central nervous systems.[11,12,13,14] Occasionally non-specific neurological or other system abnormalities may preexist before the abnormalities of muscle become prominent.[9,15,16]

The occurrence of psychiatric disturbances in myotonic dystrophy has received little emphasis as regards treatment, although they are a well recognized feature. When noted they have been attributed to either an associated mental retardation,[1,17] a psychological reaction to a chronic debilitating illness,[30,18] or a neuroendocrine disorder (thalamic or hypothalamic dysfunction).[12,13,19,20] Previous literature, with one exception, has not indicated that the phychiatric disturbances may be a direct manifestation of the disease itself. The following case report represents an adolescent with myotonic dystrophy in which the psychiatric symptoms appear to be a direct manifestation of the disease.

*Child Neurology, Children's Mercy Hospital, 24th at Gillham Road, Kansas City, Missouri 64108.
**Resident, Dept. of Neurology, University of Arkansas for Medical Sciences, 4300 West Markham, Little Rock, Arkansas 72205.
***94 Trimleston Gardens, Booterstown County, Dublin, Ireland.

CASE REPORT

A sixteen-year-old Caucasian female, whose father has myotonic dystrophy, was noted to have problems with myotonia at age eleven. She was admitted to the hospital in November, 1983, with a chief complaint of "black out spells". These spells consisted of episodes which lasted 10-45 minutes and reportedly were preceeded by stomach pain, and followed by auditory hallucinations, confusion, anxiety, and stereo-typed movements. Following these episodes, she would remain amnestic for what had transpired.

She has a long history of problematic behavior at school and poor peer relationships, dating back to a few years prior to the onset of the muscular manifestations of myotonic dystrophy. Her initial symptoms that prompted evaluation at age eleven were speech problems, early exhaustion, and declining academic performance. At that time she underwent psychological evaluation. Psychometric testing included: Weschler Intelligence Scale for Children, Draw-A-Person, Draw-Your-Family, Bender Gestalt, and Thematic Apperception Test. They revealed an average level of intellectual functioning, evidence of considerable anxiety, emotional immaturity, and preoccupation with injury and death. Her poor academic performance was thought to be related to her inner conflict which did not allow her to focus on tasks in an efficient way; the intra-test pattern indicated a higher than average potential.

At age fourteen she was evaluated again by a psychiatrist for frequent fighting at school and poor social adjustment. She was found to have a sustained dysphoric mood, low self-esteem, and feelings of inadequacy. With the clinical diagnosis of dysthymic disorder she was maintained on out-patient psycho-therapy which resulted in improvement in her academic performance and social interaction.

For sometime prior to the development of her "black out spells" which resulted in hospitalization, she was reported to be living in a "fantasy world". She claimed special power in communicating with the dead and an ability to know what others were thinking. Upon admission physical

examination was typical for myotonic dystrophy with myotonia present in her handgrip and interosseous muscle atrophy present. On mental status evaluation she was found to be alert and oriented. Magical thinking was evident in that she professed the ability to feel and interpret the "brainwaves" of other people and she felt she could sense the presence of her dead relatives in the room. She also reported auditory hallucinations in which a voice would speak within her head and comment on her behavior. She frequently misidentified herself with her mother and her mother with her teacher.

Electroencephalogram with nasopharangeal leads was normal on three occasions. Her MMPI revealed nonconventional thinking and the Rorschach indicated overly complicated and disorganized thought processes. Following this workup the psychiatry and neurology consultants agreed that her complaints were most likely psychogenic in origin. She was transferred to the psychiatric unit for the treatment of her psychotic symptoms. This consisted of psychotherapy alone. She was hospitalized 18 days and was discharged in good condition, with no evidence of her previous psychotic symptoms. She has been followed by her local community health center with no recurrence of problems to date.

A review of her family situation revealed that her father, known to have muscular dystrophy (as noted above) for several years, developed intermittent episodes of confusion and bizarre behavior prior to his muscular manifestations of myotonic dystrophy. He was recently treated at our state psychiatric hospital for acute agitation, and euphoria. He suddenly became manic and uncooperative, running and jumping around the nursing home where he had been residing, claiming that he was healed by the Lord. The patient's thirty-five year old uncle, who is also suffering from myotonic dystrophy, had psychiatric hospitalization for psychotic symptoms prior to the onset of his illness, and is considered to be "mentally unstable" at the present time according to his family. Unfortunately, we have not been able to receive medical reports on him. The patient's father responded to a short course of haloperidol, with no recurrence of psychotic or manic symptoms since.

DISCUSSION

Mental retardation, which may even preceed the onset of physical signs, occurs frequently in myotonic dystrophy, being reported in 43 of 55 cases in one literature review.[25] Mental changes, abnormal personality development, deviant behavior, and low intelligence were reported in early descriptions of this illness as prominent extra muscular features. Some authors considered the mental changes secondary to the poor social and economic conditions under which these patients lived. Maas and Peterson noted that a characteristic temper occurred in nearly all of their cases whether there was mental retardation or not. Six of their twenty-nine patients had symptoms resembling those of the "classical reaction type" (such as: schizoid, paranoia, epileptoid, hypomanic, and hysterioid behaviors). However, their views regarding a high frequency of mental changes among the otherwise unaffected relatives have not been supported by other studies.[17] Others have considered the abnormal personality and a lack of initiative to be associated with low intelligence and mental retardation, which at times is severe enough to result in institutional care. Although there is still some dispute, most reports have concluded that the intellectual impairment is static rather than progressive.[17,21] In general, no correlation has been found between the severity of reduced intelligence, lack of initiative, emotional changes, and the severity of muscle disease. Severe psychotic changes, as noted in our patient, are uncommon,[11,17] but, diminished initiative and other emotional changes are frequent.

Being a well recognized feature of this disease, mental retardation has unfortunately provided a ready explanation for behavior changes when they occur. They are viewed as a worsening of a preexisting mental retardation, or as a manifestation of its onset. This has resulted in a delay in recognizing psychiatric problems as a primary feature of this disease. Also clouding the issue is the realization that in any chronic debilitating illness, psychological problems in dealing with the illness itself are considerable; and separating such a problem from a direct manifestation of the disease may be difficult.

Ambrosini, et al.,[23] recently reviewed the psychopathology associated with myotonic dystrophy and recognized it as a primary feature of this disorder. By our review, they are the only authors to date to do so. They proposed, however, that the possible etiology of this neuropsychopathology re-

sults from changes in the medial thalamic nucleus. In our view the lack of well documented, consistent hormonal abnormalities or symptoms related to thalamic, hypothalamic, or prefrontal lobe dysfunction, in the great majority of these patients does not support this theory. Symptoms resembling those categorized in thalamic dysfunction such as sensory disturbances, vasomotor liability, thermal regulatory disturbances, excessive sweating, hypersomnolent state, and thalamic dementia are unusual in myotonic dystrophy. Furthermore, widespread studies of the central nervous system pathologically, electroencephalographically, radiographically, and neuropsychologically, all have failed to demonstrate any consistent focal lesion.

Pathologically, reduced brainweight, abnormalities in gyral architecture, and disordered cortical cells with neurons present in the subcortical white matter (suggesting disturbed migration of the neurons during fetal life)[19,27] all have been noted. Microscopic evidence of numerous inclusion bodies in thalamic neurons have also been reported, although not always in patients with mental retardation. Culebras, et al.,[13] suggested that this abnormality reflected a progressive degeneration, whereas Rosman, et al.,[19] felt this finding occurred during intrauterine growth. Instances of apparent decline in intellectual function have been reported,[21] however, other causes such as hypothyroidism or other endocrine disorders were not ruled out.

Although abnormalities in electroencephalograms (mainly manifested by excessive theta or delta wave activity) have been reported, no correlation has been found between this finding and progressive intellectual dysfunction.[22] Also, no consistent focal abnormality has ever been described.

Neuropsychological studies in myotonic dystrophy have shown impairment of a wide range of adaptive abilities which are dependent upon higher levels of cerebral function.[26] These areas include abstraction, new concept formation, and perseverative thinking. These studies strongly suggest diffuse cerebral dysfunction rather than a focal lesion.

Radiologically, no focal central nervous system lesion has been regularly noted.

Myotonic dystrophy has already been established as a multi-system disorder, thus a primary behavioral or psychiatric disturbance is inviting to accept as one of the multi-faceted aspects of this disease. While this concept is unproveable, the occurrence of psychiatric disturbances prior to the other manifestations of the disease is strong support for this view.[24] As such, associated mental problems, behavioral disturbances, and social maladjustments should be approached from the standpoint that they are potentially treatable manifestations of this disorder, and not just unfortunate features. Future studies may show that long term psychological counseling will help curtail psychiatric problems in myotonic dystrophy, such as in our patient. Although, we have no reason to expect that, given our limited follow up. In any event, it is time for better recognition of, and attention to, this aspect of myotonic dystrophy, both in future studies and on a case-by-case basis with individual patients.

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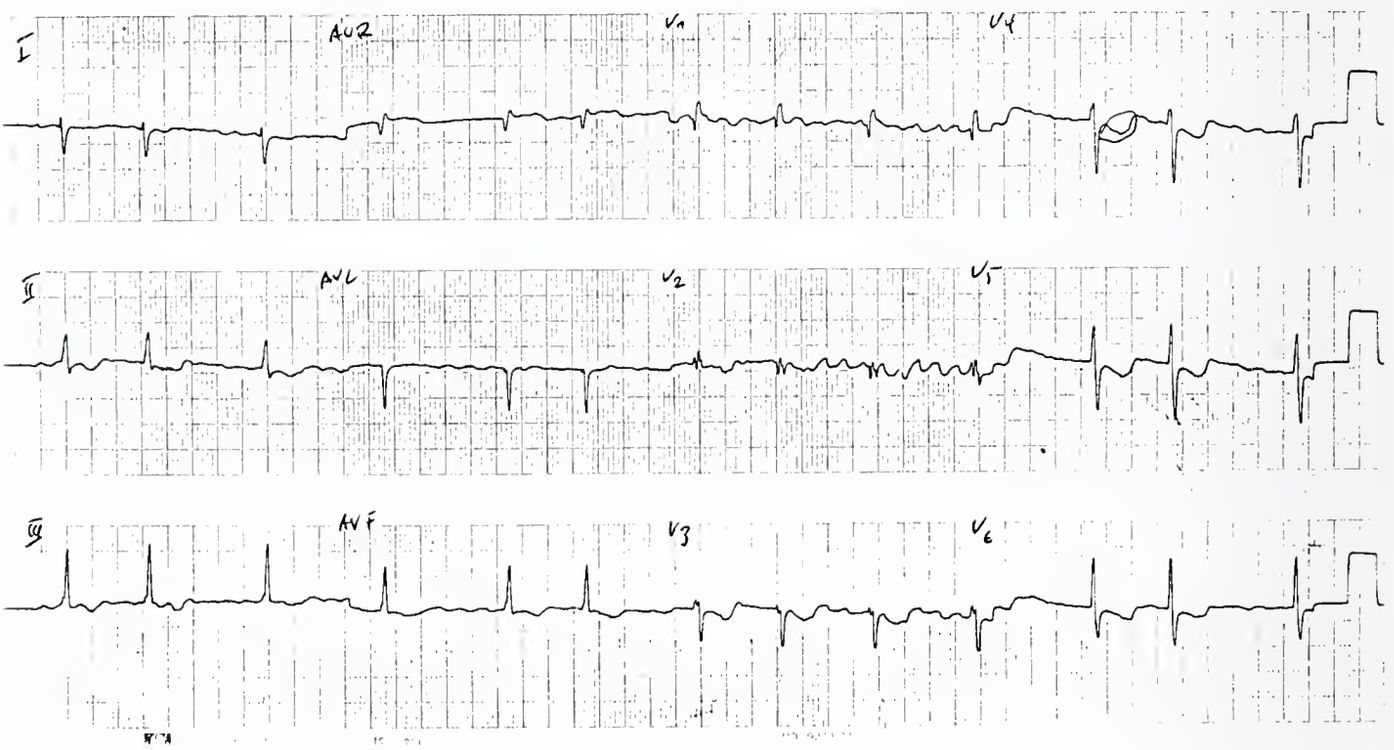
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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 387)

HISTORY: W. W. is a forty-year-old man who has presented because of palpitations, shortness of breath on exertion, and occasional bouts of hemoptysis. His physical examination reveals a normotensive male with an irregular pulse. A left parasternal impulse is present. S-1 is variable, an opening snap is present, and a grade 2 of 6 diastolic murmur, best heard after exertion, is noted. What do you think he has, what do you think of his ECG, and how would you work him up?



William C. Furlow, M.D., and John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

"Feet of Clay"

Charles C. Schock, M.D.*

The author of the Old Testament book of Daniel speaks in Chapter Two of an image whose "head was of fine gold, his breast and his arms of silver, his belly and his thighs of brass, his legs of iron, and his feet part of iron and part of clay". Later we read, "as the toes of the feet were part of iron and part of clay, so the kingdom shall be partly strong and partly broken". So it is, occasionally, in orthopedics, where an ostensibly plebian toe injury can wreak havoc on the patient's lifestyle. It is said that baseball pitching great "Dizzy" Dean had his career ended prematurely as a result of such an injury, which apparently so altered his pitching style that he sustained irreversible arm damage.

Injuries to the toe, distal to the metatarsophalangeal joint are classified by several sets of alternatives: open versus closed, displaced versus undisplaced, comminuted versus simple, intra-articular versus non-articular, and fracture versus dislocation.

With respect to open fractures, the usual regimen of meticulous debridement and irrigation, antibiotic coverage, and judicious closure apply as well to the toes as to any other part of the body. The advent of the three-wheeler has increased this category of injury, especially to the fibular side of the foot and has added another dimension to the already too common lawn mower and industrial injuries.

Turning to closed injuries, by far the most common type is the minimally displaced fracture, which may be either comminuted or simple. In either case splinting to the adjacent toe with appropriate padding between the toes is generally satisfactory immobilization. In comminuted fractures pain and swelling may be quite prominent, and an initial period of elevation, ice application, and observation is desirable. Patients should be cautioned that normal functioning should not be expected for at least three weeks, and probably longer for more demanding activities. A firm soled shoe with the top portion cut out and a metatarsal bar added is helpful in encouraging progressive ambulation.

Displaced fractures of the phalanges need mainly to be manipulatively aligned, and splinted as in undisplaced fractures, while displaced fractures involving the interphalangeal joints should be reduced as anatomically as possible. For fractures involving the proximal phalanx adjacent to the interphalangeal joint, longitudinal traction with either gauze loop or a Chinese finger trap is sometimes helpful in achieving reduction. If reduction cannot be maintained, a small threaded Kirschner wire passed transversely through the distal phalanx can be utilized to exert the continuous traction by a rubber band attached to an aluminum splint which is positioned distal to the toes and anchored to the foot on the medial and lateral sides. If there is a large single interarticular fragment, especially if it involves the great toe, closed or open reduction can be carried out, and a Kirschner wire employed to fix the reapproximated articular surfaces. Following open reduction and internal fixation a short-leg walking cast is most effective and convenient in reducing stress on the fractured area while healing is taking place.

Comminuted fractures of the distal phalanges are most frequently encountered following dropping a heavy object on the toe producing a bursting force frequently accompanied by significant

*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

soft tissue injury as well. A subungual hematoma is common following this injury. It should be evacuated under sterile conditions by drilling the nail. Osteomyelitis of the bony fragments of the distal phalanx may result if the nail is removed.

Dislocation of the interphalangeal joints may occur following axial loading of the end of the digit. They almost always may be reduced by closed means following digital block. Dislocation, once reduced, is usually stable and after two to three weeks of appropriate immobilization and protection, function may be resumed. Open reduction is infrequently required.

Although I have heard it said that the chief function of the little toe is to stay out of the way of the bed post, we do find that toe malfunction due to injury can significantly affect total performance. Proper initial treatment, acceptance of a period of rest and reduced function, and then a gradual rehabilitation are all ingredients in the successful management of these injuries.

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Pediatric Update

Plasma Cell Granuloma of the Lung

Report of a Case

Morris Kletzel, M.D.,* Luis Emilio Salmon, M.D.,** and Jose Jessurum, M.D.***

ABSTRACT

This is a report of a patient with plasma cell granuloma of the lung. According to the literature, this is the most common primary tumor of the lung in the pediatric age group. The presence of a primary lung tumor is rare. This in an interesting case because of its unusual presentation and diagnostic challenge.

INTRODUCTION

Primary tumors of the trachea, lungs and bronchi are rare in the pediatric age group. The tumors most frequently seen in the lungs are metastatic in origin, mainly from Wilm's Tumor, Osteogenic sarcoma and other soft tissue sarcomas.

Traditionally, the primary tumors of the lung are usually benign like the hamartomas, papillomas of the trachea and bronchus, broncogenic cysts and other tumors derived from ectodermal and endodermal tissue.

The benign parenchymal tumors of the lung are considered to be rare in the pediatric age group. Golbert and Pletinue from the Oncological Institute of Moscow reported an incidence of 0.7% in a review of 1,075 cases of tumors localized in the lungs and bronchi.[1] Bahadori and Liebow report that the plasma cell granulomas of the lung or inflammatory pseudotumor is the most frequently found in children less than 16 years of age.[2,3,4,5] At the M. D. Anderson Hospital and Tumor Institute, in a series of 934 tumors found in different sites, all were benign and no reports of this type of lesion were described.

Plasma cell granulomas of the lung usually affect the lung parenchyma and may involve the bronchi, the mediastinum and occasionally the lymph nodes. The great majority of patients with this tumor are asymptomatic. This tumor is usually discovered in a chest radiograph, in which it appears as a single solitary mass, and it may be associated with atelectasis and calcifications.

CASE REPORT

This is a 6-year-old Latin American female who had an average of 4 episodes of bronchitis over a 2 year period. Thirteen months prior to admission the mother noticed enlargement of the right hemithorax, dyspnea, weight loss and pallor.

She was seen by a physician who prescribed antituberculosis drugs without obtaining improvement of the symptomatology. On the second visit, a chest radiograph was performed showing a right apical mass of approximately 4 cm x 4 cm that pushed the mediastinum to the left. Biopsy was performed and a diagnosis of mesothelioma was made. She was referred to our hospital where complete surgical excision of the mass was done. The diagnosis of plasma cell granuloma was made. The mass was well encapsulated and measured 9x9x9 cm. Patient has been followed for 1 year without evidence of recurrence.

DISCUSSION

The inflammatory pseudotumor or the plasma cell granuloma of the lung is a well characterized clinical pathologic entity. In the literature it has been called several synonyms such as histiocytoma[5,6] xanthoma,[7] fibroxanthoma[2,6] xantho granuloma,[2,8] sclerosing hemangioma and pseudolymphoma. The use of these synonyms is confusing in describing this disease. Some of these names are also used to describe other disease entities with clinical and histopathologic characteristics which are different from the one we are discussing.

The inflammatory pseudotumor is usually a single lesion well defined that histologically is characterized by the presence of plasmatic cells in a stroma of variable nature, characterized by the presence of fibroblastic hyalinized collagen with calcifications and in some instances even ossification. In some cases the stroma is highly

*Assistant Professor of Pediatrics, University of Arkansas for Medical Sciences and Arkansas Children's Hospital.
**Professor of Pediatrics, Hospital General De Mexico.
***Resident in Pathology, University of Florida.
Address reprint requests to: Morris Kletzel, M.D., Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Arkansas 72202, (501) 370-1495.

vascular, mimicking granulation tissue. Other than the plasma cells, there is variable infiltration of lymphocytes, mononuclear cells, with abundant fat in their cytoplasm (Fig. 1).



Figure 1.

Another histologic view of the mass with predominance of plasma cells and lymphocytes, hyalinized colagen with trapped bronchioles and califications.

The great majority of cases are localized in the thorax with more affinity for the lung parenchyma and the bronchi. On occasions the lesion is primarily in the mediastinum, and there are reports of other locations like the central nervous system and lymph nodes.[9]

From the clinical point of view the symptoms are usually few and vague. The most frequently found symptoms are dry cough, sometimes with hemoptysis. This symptom is more often found in adults than children as so often is the case in pediatric illness. A past history of an upper respiratory tract infection is often found and raises the possibility of an infectious etiology for this tumor. Physical examination usually is helpful in establishing the diagnosis. Occasionally exercise related cyanosis is present.

In one patient "clubbing" was present and was resolved after the mass was removed.[10]

Laboratory studies are usually not helpful except for arterial blood gases that may demonstrate signs of hypoxia.

The inflammatory pseudotumor is a rare lesion. The general physician, and particularly, the pediatrician has to be familiar with this entity since 70% of the cases reported are in people younger than 30 years of age and one-third in children less than 10 years of age.[11]

Bahaduri and Liebow in a review of the literature compiled 40 cases from which 15 were males and 25 females. The lesions in this report, were found more frequently in the left lung, as in our case. Only one case showed calcification.[11]

The most useful tool in establishing the diagnosis is the chest radiograph which usually demonstrates a well circumscribed solitary mass that has lobulations and occasionally calcifications (Fig. 2, 3). The presence of calcifications, localized in the posterior mediastinum, suggest the diagnosis of neuroblastomia, initially. The assay for urine catecholamines was negative. The computerized axial tomography of the abdomen and chest fail to reveal any other masses.

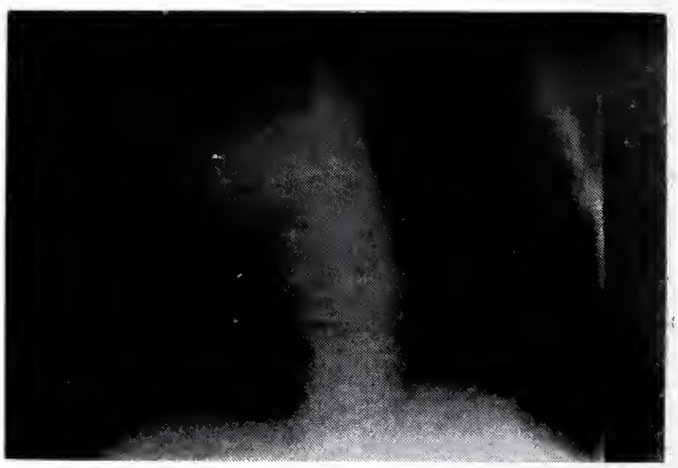


Figure 2.

Chest tomogram showing the presence of the mass and the intratumoral calcifications with displacement of the mediastinum to the left.

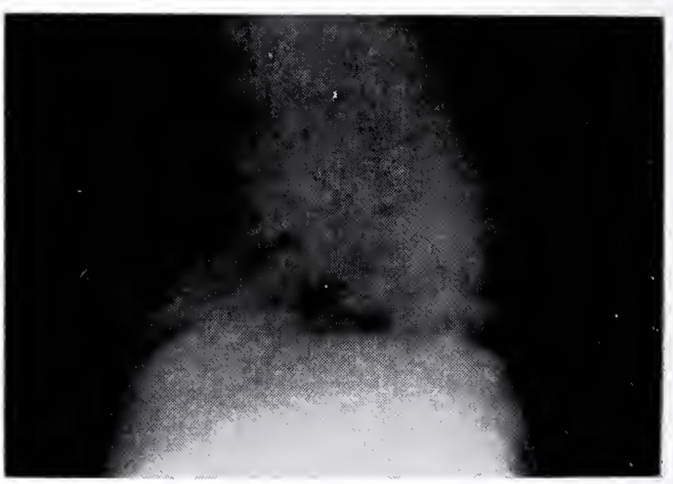


Figure 3.

Lateral view of the chest showing the location of the mass in the posterior mediastinum.

From the pathological standpoint the inflammatory pseudotumor has to be differentiated from sclerosing hemangioma, pseudolymphoma, plasmocytoma and infectious granulomas. The sclerosing hemangioma presents with a papillary appearance and has areas of sclerosis and a great number of obliterated capillaries. The inflammatory pseudotumor presents in the same way and may have areas of calcification and ossification

in the sclerotic tissue. In general, macrophages loaded with hemosiderin, as a result of an old hemorrhage, or foamy histiocytes are observed. The pseudolymphoma is considered by some authors as the localized interstitial lymphoid pneumonia, and is more frequently found in adults as a mass with diffuse limits and histologically, presenting the mature lymphocytes that in some areas are from lymphoid follicules with well constituted germinal centers.

The pulmonary plasmocytoma is an exceptionally rare tumor that is observed exclusively in adults. In this tumor histologically there are plasmatic cell layers with variable degrees of differentiation. Some of the cells present with pleomorphism and mitotic figures. In general, it is associated with extrapulmonary lesions, primarily in the bones and mediastinum.

Finally, the granulomas of infectious origin differ from the plasma cell granulomas histologically, by the presence of epitheloid macrophages and giant cells in the vicinity of necrotic areas. With the help of special stains, it is possible to demonstrate the etiologic agent in the majority of cases.

In conclusion, plasma cell granuloma of the lung is a well described entity with specific histological features. It should be considered in the differential diagnosis in children with primary lung tumors and in those localized in the posterior mediastinum with calcifications should be differentiated from neuroblastoma.

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ANSWER—Electrocardiogram of the Month

DISCUSSION: The patient's history ond physical are very suggestive of mitrol stenosis. Other choices exist and high in the differentiol would stand otriol septal defect and other entities reloted to pulmonary hypertension. The electrocordiogrom shows otrial fibrillation, right axis deviotion, ond chonges suggestive of right ventricular hypertrophy. Useful informotion could be goined from chest x-roy, echocardiography, and cordioc cotheterization. The feoture editor wishes to thonk Dr. Furlow of Conwoy, Arkonsos for his ossistonce with this month's ECG.

Cardiovascular Rounds

Feature Editor: James E. Doherty, M.D.*

Acute Onset of Dyspnea Following Coronary Artery Bypass Surgery

Moderator: Bim Sharma, M.D.*

Discussants: Robert A. Lambert, M.D.,** Professor Carl V. Leier, M.D.,***

Marvin L. Murphy, M.D.,**** and Joseph A. Franciosa, M.D.*****

Dr. Sharma: Today's case is that of sudden onset of dyspnea in a postoperative patient. Multiple diagnostic possibilities are entertained. Dr. Lambert will present the case.

Dr. Lambert: The patient is a 64-year-old white male who had undergone coronary artery bypass grafting nine days earlier. The immediate post-operative course was uncomplicated except for a small pneumothorax on the right on the fifth day. On the eighth post-operative day he became acutely short of breath and diaphoretic during his usual twice daily ambulation. He did not complain of chest discomfort. He was noted by the attending nurse to be tachypneic and to have a systolic blood pressure of 60 mm Hg. Supplemental oxygen and saline fluid challenge resulted in an increase in blood pressure while tachypnea remain unchanged.

The patient had a long history of angina, but no symptoms suggestive of congestive heart failure, cardiac rhythm disturbance, or any medical conditions requiring hospitalization. He smoked about one pack of cigarettes per day for twenty years. Medications included digoxin, oxycodone, and furosemide.

Physical examination revealed an obese, cyanotic white male in mild respiratory distress. His blood pressure was 140/80 mm Hg with a 20 mm Hg paradoxical pulse. Heart rate was 120 beats per minute and regular; respiratory rate was 30 breaths per minute. Weight had decreased five pounds since his operation. Neck exam showed jugular vein distension with an estimated central venous pressure of 7 cm of water. Kussmaul's sign was present. There were diffuse expiratory wheezes heard on chest examination. Cardiac auscultation demonstrated an S4 gallop and a three component pericardial friction rub heard on expiration. Abdominal examination was unremarkable. The left leg had served as the vein graft harvest site; neither leg had palpable venous cords and Homan's sign could not be elicited on the right side.

Electrolytes, creatine phosphokinase MB fraction (CPK-MB), and other routine laboratory obtained the previous day were normal with the exception of the hemoglobin which measured 11.4 mg% and hematocrit of 33.7%. Arterial blood gases obtained two days previously showed Po_2 66 mm Hg, Pco_2 39 mm Hg, pH 7.44, and HCO_3 26 mEq/L when the patient was receiving 4 liters per minute of nasal oxygen. Blood gases obtained following the onset of dyspnea showed

*Department of Cardiology, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72205.
**Fellow, Department of Cardiology, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72205.
***Ohio State University, Department of Medicine and Pharmacology, at Division of Cardiology, 1655 Upham Drive, Columbus, Ohio 43210.
****Chief of Department of Cardiology, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72205.
*****Director, Department of Cardiology, University of Arkansas for Medical Sciences. Director, Arkansas Children's Hospital.
Correspondence and reprints should be sent to: Robert A. Lambert, M.D., Department of Cardiology, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72205.

Po_2 43 mm Hg, Pco_2 40 mm Hg, pH 7.44, and HCO_3 27 mEq/L with the patient on the same amount of supplemental oxygen.

Repeat blood gases on 40% oxygen were unchanged. An electrocardiogram demonstrated left axis deviation and left bundle branch block which was unchanged from the preoperative trace. Portable chest x-ray showed post-operative clips and epicardial pacemaker lead present. An area of atelectasis on the right was present on an earlier chest film and was the site of the now removed chest tube. Some blunting of the right costophrenic angle was present. No pneumothorax could be seen and the heart shadow was questionably increased in size from a previous film. No radiographic signs suggesting pulmonary venous congestion were present.

The cardiology service was asked to evaluate the patient's dyspnea and hypoxemia.

Dr. Leier: The patient offers an interesting challenge to our diagnostic skills. The differential diagnostic list contains several serious and potentially lethal causes of his symptoms and physical signs.

One of the first considerations in a post-operative chest patient who suddenly develops dyspnea is development of a pneumothorax. Eight days following an operation is rather late for this, but it might represent reoccurrence of the pneumothorax he had had on the right. However, the chest x-ray eliminates pneumothorax as an underlying diagnosis.

Another possible cause for his breathing difficulty stems from his underlying coronary artery disease. Conceivably, the bundle branch block on electrocardiagram is masking evidence of myocardial ischemia as the cause of pulmonary edema, a so-called "angina-equivalent". The absence of the complaint of chest pain and the normal chest x-ray do not rule out this diagnosis. Serial CPK-MB isoenzymes should be obtained.

Pericardial tamponade must certainly be considered in a patient with dyspnea, neck vein distension, Kussmaul's sign, paradoxical pulse, and a pericardial friction rub. The pericardium is usually reapproximated following open heart surgery, and tamponade is a well recognized, though infrequent, complication. The question of increase in heart size on chest x-ray and the slightly low hematocrit support the possibility of hemorrhage into the pericardial space. Was the patient on anticoagulants?

Dr. Lambert: Except for heparin administered intraoperatively, he had not received anticoagulants or anti-platelet agents.

Dr. Leier: The final choice in the differential diagnosis is pulmonary embolus. This occurs infrequently in the early ambulated post-coronary bypass patients. The sudden nature of the event and the inability to correct hypoxemia with increasing concentrations of inspired oxygen support this diagnostic choice. The pericardial friction rub may represent contigious involvement from the pleura which can occur in pulmonary embolus.

Dr. Sharma: Pulsus paradoxicus and Kussmaul's sign have also been described in pulmonary embolus and are not specific for pericardial tamponade.

Dr. Lambert: Our clinical impression was that the patient had suffered a pulmonary embolic event. Cardiac tamponade was strongly considered as a diagnosis because of the presence of pulsus paradoxicus and a pericardial rub, but jugular vein distension was not striking and this explanation was felt to be less likely. Myocardial ischemia or infarction was considered as a possibility. Dr. Leier, what would be your recommendations for further diagnosis and management of the patient?

Dr. Leier: I would obtain a pulmonary angiogram with measurements of right heart pressures to exclude the diagnosis of pericardial tamponade as well as pulmonary embolus. At my institution, the radiology department performs pulmonary angiography and usually requests a lung ventilation-perfusion scan first to guide in selective dye injections.

Dr. Lambert: It was arranged for the patient to have a lung scan then be transferred to the cardiac catheterization laboratory for right heart pressure measurements and pulmonary angiography. Should an echocardiogram be obtained to evaluate a possible pericardial effusion?

Dr. Franciosa: I would like to address this point. While there have been echocardiographic findings suggestive of pericardial tamponade, none are diagnostic. Tamponade can occur with rapid accumulation of a small amount of fluid

which might not be seen on the echocardiogram. Some effusion is likely to be seen following coronary artery bypass and would not be diagnostic of tamponade. I do not feel that an echocardiogram would be helpful or must be obtained as it will merely delay the more definitive procedures which must be performed.

Dr. Lambert: An echocardiogram was ordered with the rationale that if the evidence for tamponade became more compelling, an anterior clear space should be documented before attempting pericardiocentesis. Pericardial fluid was not demonstrated on echocardiography.

Dr. Murphy: As Dr. Franciosa stressed, the diagnosis of pericardial tamponade remains an entirely clinical decision based on history and physical examination. The echocardiogram could have presented you only with confusing information. Right heart catheterization does not always demonstrate diagnostic diastolic equilibration of pressures in the right heart chambers and pulmonary artery because the patient is often very tachypneic and respiratory influence on the pressure curves make interpretation difficult.

Dr. Lambert: Pressures obtained during the right heart catheterization are shown (Table 1). I felt the pressures were normal and did not demonstrate diastolic pressure equalization. Because there have been reports suggesting this physiology may not be apparent if the patient is volume-depleted, 350 cc of normal saline were rapidly infused intravenously. Repeat measurements again did not demonstrate pericardial tamponade.

TABLE 1
RIGHT HEART CATHETERIZATION

	before fluid challenge	after 350cc saline infusion
right atrium	2 mm Hg	4 mm Hg
right ventricle	28/2 mm Hg	38/7 mm Hg
pulmonary artery	24/12 mm Hg	37/16 mm Hg
pulm. capillary wedge	7 mm Hg	not measured

Pressures in right heart chambers and pulmonary artery before and after intravenous saline infusion.

Dr. Franciosa: Notice that the pulmonary artery diastolic pressure exceeds the pulmonary capillary mean wedge pressure by more than 4 mm Hg. This is very suggestive hemodynamic evidence of pulmonary embolus as a diagnosis since a gradient between pulmonary arterial diastolic and wedge pressures indicate a primary cause of pulmonary pressure elevation.

Dr. Lambert: The lung ventilation-perfusion scan was processed while the patient was in the catheterization laboratory and it was elected to proceed with pulmonary angiography.

Dr. Leier: Though I am not an expert in the interpretation of lung scans, the ventilation images appear normal, while the perfusion scan clearly shows multiple defects consistent with pulmonary emboli, particularly in the left apex and left lingular area (Figure 1).

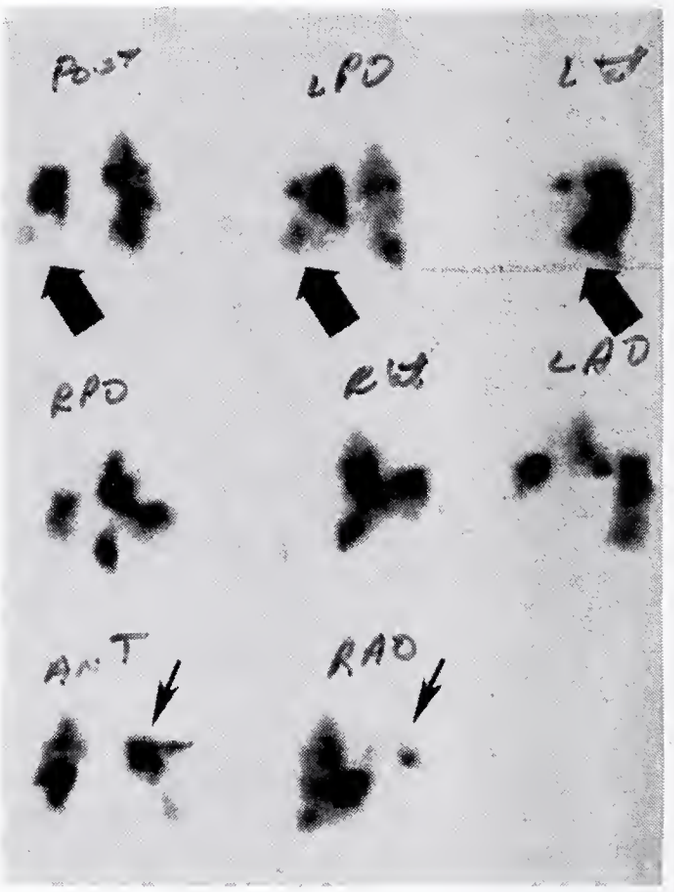


Figure 1.
Nuclear perfusion scan in multiple views demonstrating defect in left lung base (large arrow) and left lung apex (small arrow). Nuclear ventilation scan was normal and showed no defects in these areas.

Dr. Lambert: Pulmonary angiography showed abrupt cut-off of large central vessels and multiple filling defects, consistent with multiple pulmonary emboli (Figure 2). Dye injections were limited only to the right side since further diagnostic information was unnecessary.

Dr. Leier: While both the lung scan and pulmonary angiogram provide very convincing evidence for pulmonary emboli as the cause of this man's problems, I hasten to point out that concurrent

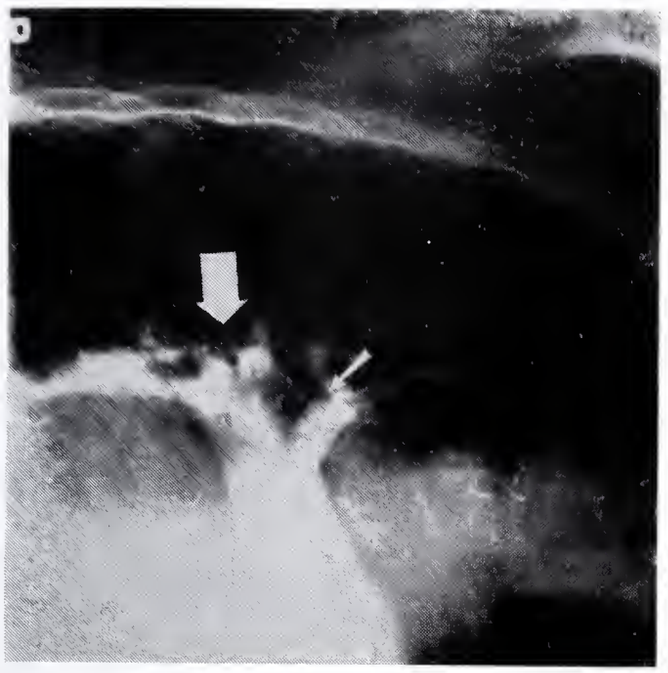


Figure 2.

Pulmonary angiogram demonstrating abrupt cutoff of large central vessel (large arrow) and filling defect consistent with thrombus (small arrow).

myocardial ischemia or a developing pericardial problem should continue to be considered. The latter is particularly important since the patient was to be started on anticoagulants, I presume.

Dr. Lambert: He was started on continuous heparin infusion. Streptokinase was contraindicated because of his post-operative status. Serial CPK-MB measurements eliminated the diagnosis of myocardial infarction and the pericardial rub resolved spontaneously. He had a subsequent uneventful hospital course and was begun on oral anticoagulation following 10 days of intravenous therapy.

Dr. Sharma: In summary, a patient who developed shortness of breath, paradoxical pulse, a pericardial friction rub, and hypoxemia following open-heart surgery has been presented. The differential diagnosis included myocardial infarction, pericardial tamponade, pneumothorax, and pulmonary embolus. The presence of pulsus paradoxicus and Kussmaul's sign suggested tamponade. The final diagnosis of massive pulmonary emboli was demonstrated by perfusion lung scan and angiography. This case documents pericardial involvement and a picture of acute pericarditis as the presentation of pulmonary embolism. I wish to thank Dr. Lambert for this presentation, as well as Dr. Leier and the other discussants for their comments.

SUGGESTED READING:

1. Cohen, Stafford I., Kupersmith, Joel, Aroesty, Julian, and Rowe, John W.: Pulses Paradoxus and Kussmaul's Sign in Acute Pulmonary Embolism. American Journal of Cardiology 32: 271, 1973.
2. Lorell, Beverly, and Braunwald, Eugene: Pericardial Effusion with Cardiac Compression: Cardiac Tamponade. *Heart Disease—A Textbook of Cardiovascular Medicine.* W. B. Saunders Co., 1984, p. 1480-1486.
3. McFadden, E., Jr., Regis, E., and Braunwald, Eugene: "Cor Pulmonale and Pulmonary Thromboembolism" in *Heart Disease—A Textbook of Cardiovascular Medicine.* W. B. Saunders Co., 1984, p. 1578-1589.
4. Moser, Kenneth M.: Pulmonary Embolism. American Review of Respiratory Disease 115:829-851, 1977.



EDITORIAL

Fish—More Than a Pastime

Alfred Kahn, Jr., M.D.

One of mankind's favorite pastimes may have a dual value in extending life expectancy. Fishing is a great means of relaxation, and Arkansas abounds in areas where catfish, bass, brim, crappie and other edible fish can be found. No one can deny that a relaxing pastime is thought by most physicians to promote longevity. The converse is that stress seems to promote coronary heart disease through various channels. There are numerous articles in the medical literature attempting to firmly relate stress to heart disease, and it is not illogical to state that relaxation is good for human beings from a cardiac point of view.

A second value of fishing is now beginning to be reported with some frequency in the medical literature—that is, if one eats fish—namely, the ingestion of fish tends to, in some manner, retard coronary disease. There are three articles in the New England Journal of Medicine of May 9, 1985, which relate fish consumption and cardiac disease.

The first article is by Kromhout, Bosschieter and Coulander, entitled "The Inverse Relation between Fish Consumption and 20-Year Mortality from Coronary Heart Disease" (New England Journal of Medicine, Volume 312, Page 1205, May 9, 1985). In this discussion, the authors point out that there is a low death rate among Eskimos due to coronary atherosclerosis; they quote other authors indicating that the low incidence of coronary disease seems to be related to the amount of fish consumed; this was not alone true in Greenland, but also was noted in Japan, especially in the areas where fish consumption was highest. These authors studied the relation of diet and other risk factors to chronic disease in the Netherlands. Their results indicated that the ingestion of fish seemed, to them, to be an independent risk factor for coronary heart disease. They stated that there was an inverse relationship between ingesting fish and the presence of coronary atherosclerosis. They make a rather surprising statement based on their studies that eating fish only once or twice a week may have protective value from coronary artery disease. In the discussion of their findings, they point out some interesting data including the fact that Eskimos who eat a great deal of fish have proved lower levels of total cholesterol and triglycerides. These findings are accompanied by an elevation of high-density lipoproteins. They also cite the fact that there was a Dutch study in which cheese was replaced by mackerel in the diet, and it lead to a drop in cholesterol and triglyceride levels in the serum. In the authors' own study, they were not impressed with the amount of fish eaten and the level of total cholesterol, and because of this and some other studies, they felt that the protective effect of eating fish could not be explained by its effect on lipid metabolism. They postulated that one of the precursors of thromboxane A_3 and of prostaglandin I_3, namely, eicosapentaenoic acid, is found in fish. The authors felt that if this eicosapentaenoic acid and low levels of arachidonic acid were present that an anti-thrombotic state might derive. Still another opinion expressed in the review was that diets rich in fish oil are said to have a low thrombogenicity because "platelets cannot produce sufficient thromboxanes to maintain platelet aggregation". The authors quote other studies indicating that individuals who eat fish have decreased platelet aggregation and longer bleeding times. Probably the "bottom line" in this study still has to be the fascinating statement that eating fish twice a week has a beneficial effect in preventing coronary heart disease.

Phillipson, Rothrock, Connor, Harris and Illingworth have published an article entitled "Reduction of Plasma Lipids, Lipoproteins, and

Apoproteins by Dietary Fish Oils in Patients with Hypertriglyceridemia" (New England Journal of Medicine, Volume 312, Page 1210, May 9, 1985). The authors state "although fish oils have also been found to have a hypolipidemic effect, metabolic differences between dietary fish oils and vegetable oils have not been appreciated until recently. Both salmon oil and safflower oil have been shown to lower concentrations of plasma cholesterol and low-density lipoproteins (LDLs) in normal subjects, but only omega-3-rich salmon oil concomitantly decreased levels of plasma triglycerides and very-low-density lipoproteins (VLDLs). Levels of high-density lipoproteins (HDLs) were unaffected". Phillipson, et al., studied 20 patients with hypertriglyceridemia using three different diets which were carefully monitored. The diets were similar except for the dietary fats; the first diet was a control diet which had low fat and low cholesterol; the second diet contained fish oil; the third diet was a polyunsaturated vegetable oil diet. Phillipson, et al., concluded from their studies of these patients with hypertriglyceridemia that fish oil caused a marked fall in the plasma triglyceride level. The individuals who were used in the experiment were of varying lipid phenotypes. The authors have some interesting speculations on how fish oil produces the fall in plasma triglycerides. They feel that a likely mechanism is the reduced formations of VLDLs in the liver. They considered a second possible mechanism to be enhanced clearing of VLDLs by the liver or peripheral tissues. There is some evidence presented to the effect that consuming fish oil decreased the formation of LDL synthesis. Lastly, the authors say that fish oils also increased fecal steroid excretion. It is worth noting that the chylomicra seen in Type V hyperlipidemia are decreased after the ingestion of fish oil; the cause of this is unknown. In conclusion, Phillipson, et al., feel that the use of fish in the diet may be of real practical value in the treatment of hypertriglyceridemia; saying it another way, bagels and lox has many dietary merits.

In line with the above studies, is still a third article which bears on fish oil. Lee, Hoover, Williams, Sperling, Ravalese, Spur, Robinson, Corey, Lewis and Austen have published an article entitled "Effect of Dietary Enrichment with Eicosapentaenoic and Docosahexaenoic Acids on In Vitro Neutrophil and Monocyte Leukotriene Generation and Neutrophil Function" (New England Journal of Medicine, Volume 312, Page 1217, May 9, 1985). The article points out that arachidonic acid, which derives from cell activation, can be metabolized in two manners. First of all, it can go down the cyclooxygenase pathway to prostaglandins and thromboxane, or it can go via the 5-lipoxygenase pathway in a cascade in which the intermediates of 5-hydroperoxyeicosatetraenoic acid and leukotriene A_4 lead to a series of end products which include leukotriene B_4, leukotriene C_4, leukotriene D_4, and leukotriene E_4. The authors state that "in Eskimo populations, a high ratio of the sum of the concentrations of eicosapentaenoic acid and docosahexaenoic acid to the concentration of arachidonic acid in platelet and plasma lipids is associated with a low incidence of myocardial infarction, and this finding has been attributed to the inhibition of metabolism of arachidonic acid in the cyclooxygenase pathway and the elaboration of attenuated products from the alternative N-3 fatty acids. We demonstrate that following a diet supplemented with triglycerides rich in eicosapentaenoic acid and docosahexaenoic acid for six weeks, leads to incorporation of eicosapentaenoic acid into the membrane lipids of neutrophils and monocytes, suppresses the generation of leukotriene B_4 by the 5-lipoxygenase pathway, and alters the neutrophil functional responses mediated by this leukotriene". In the discussion of their work, the authors relate that after eating eicosapentaenoic acid and docosahexaenoic acid, which are found in fish oils, there is a definite decrease in 5-lipoxygenase products. This same diet also caused a reduction in neutrophil chemotaxis when there was stimulation with certain leukotrienes. A similar reduction in activity of monocytes was also noted. In short, fish oils seem to impair inflammatory reactions, and this may have some direct bearing on the vascular tree and other sites of inflammatory conditions and disorders.

It is easy enough to include fish in a dietary program when it seems to promise a measurable decrease in vascular disease.



"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Journal of the Arkansas Medical Society
Vol. 6 No. 11 May, 1896 p. 517-518

County Societies.

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Perpetual Request.

The secretaries, or any other officers, members or *acquaintances* of county societies are requested to aid the JOURNAL in completing the roster of county medical societies.

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Saline County Medical Society.

The medical society of Saline County met at the courthouse and elected the following officers: President, Dr. D. N. Fisher, vice president, Dr. J. M. Phillips; secretary, Dr. Dewell Gann; committee on credentials, A. J. Graham, L. L. Quinn, Dewell Gann, they are also committee on by-laws; committee on exercises, A. J. Graham, J. M. Phillips and L. L. Quinn. Members present, Drs. D. N. Fisher, J. M. Phillips, L. L. Quinn, A. J. Graham and Dewell Gann. Dr. J. W. Walton's name being presented, he was elected to membership. This society shall be called the Saline County Medical Society and the meetings shall be held at the courthouse the first Monday night in each month at 7:30 p.m. Dr. L. L. Quinn is to read a paper on diarrhoea and Dr. D. N. Fisher to read a paper on so-called slow fever at the next meeting. Delegates elected to State medical society, to be held in Fort Smith April 29, Drs. A. J. Graham and Dewell Gann. The society earnestly requests that all regulars become members. There being no further business the society adjourned until our next regular meeting.

DEWELL GANN,
Secretary.

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Mississippi County Medical Society.

The Mississippi County Medical Society reorganized May 5, 1896, with the following members, viz:

Drs. T. J. Brewer, R. C. Prewitt and Chas. G. Turner, of Osceola; Dr. W. K. Harrison, of Golden Lake, and Dr. D. M. Deenn, of Barfield.

Dr. W. K. Harrison was elected president, Dr. T. J. Brewer vice president, and Dr. C. G. Turner secretary and treasurer.

Drs. R. E. Prewitt, T. J. Brewer and C. G. Turner were appointed as a committee to revise the old constitution and by-laws of the society.

On motion, the meeting adjourned to meet the first Monday in July, 1896.

W. K. HARRISON, M.D.,
President.
CHAS. G. TURNER, M.D.
Secretary and Treasurer.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

RECENT ADVANCES: MEDICAL AND EMOTIONAL PROBLEMS IN PATIENTS WITH SLEEP COMPLAINTS

Presented by Lawrence Scrima, Ph.D., and F. Charles Miller, M.D., *February 6, 8:00 a.m.-5:15 p.m.,* UAMS Education Building, Room G/134. Seven hours Category I credit. Sponsored by UAMS. Fee $65.

CARDIOVASCULAR INSTITUTE SYMPOSIUM

Presented by Little Rock Cardiovascular Institute and Baptist Medical Center, *February 22,* Shuffield Auditorium at Baptist Medical Center, Little Rock. For further information call (501) 227-2672.

SYMPOSIUM ON CRITICAL CARE MEDICINE

Presented by UAMS Office of Continuing Med-

ical Education for Physicians (Glen Baker, M.D.) and University of Tennessee, Memphis (Milton D. Deneke, M.D.), *February 26-March 1,* Sheraton Lakeshore Resort, Hot Springs. Eleven and three-quarter hours Category I credit. Fee: $150; Residents and Fellows $75. Sponsored by UAMS.

ANNUAL SURGERY SYMPOSIUM, "ADVANCES IN GI AND COLORECTAL SURGERY"

Presented by Robert W. Barnes, M.D., *March 20-22,* Arlington Hotel, Hot Springs. Sponsored by UAMS.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC-South Arkansas.
Colposcopy-Pap Smear Clinic, fourth Tuesday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, second and fourth Thursday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Behavioral Sciences Conference, first and fourth Friday, 12:45 p.m. to 1:30 p.m., AHEC-South Arkansas.
Gyn-Pathology Conference, second Friday, 12:00 noon to 1:00 p.m., AHEC-South Arkansas.
Pediatric Conference, second and third Friday, 12:30 p.m. to 1:30 p.m., (second Friday, Warner Brown Hospital, third Friday, Union Medical Center).

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology-Mortality Conference, second Thursday, 3:00 p.m., Conference Room, Building 1.
Radiology Conference, third Thursday, 1:00 p.m., Conference Room, Building 1.
ICU Lecture, second Friday, 1:30 p.m., Conference Room, Building 1.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pulmonary Conference, each Monday, 3:00 p.m., Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Genetics Conference, each Wednesday, 1:00 p.m., Annex Conference Room.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neuroscience Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
General Pediatrics Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Pathology Conference, each third Tuesday, 3:00 p.m. to 4:00 p.m., Pathology Library.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Surgery Conference, each Thursday, 7:30 a.m. to 8:30 a.m., Conference Room #1.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #1.

LITTLE ROCK — ST. VINCENT INFIRMARY

Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
General Medicine Journal Club, first and third Tuesday, 12:00 noon to 1:00 p.m., Medical Affairs Conference Room.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Education Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Education Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interhospital GI Problems Conference, first Monday, 6:00 p.m., St. Vincent Infirmary, Classroom 3, Education Wing.
OB/Gyn Grand Rounds, each Wednesday, 7:30 a.m., UAMS Education Building, Room G/135.
Psychiatry Grand Rounds, each Thursday, 12:00 noon, UAMS Child Study Center Auditorium.
Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Education Building, Room G/131.
Surgical Science Seminar, each Saturday, 8:00 a.m., Education Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS ACC Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Education Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Education Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Education Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Education Building, Room G/135.
Arkansas Academy of Pathology, first Wednesday, 5:30 p.m., Coy's Restaurant.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Medicine Service Teaching Conference, each Monday, 3:30 p.m., NLRVA, Building 66, Room 38.
VA Psychiatry Service Lecture Series, each Wednesday, 1:00 p.m., NLRVA, Building 170.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.
VA Surgery Tumor Board, each Tuesday, 1:00 p.m., LRVA, Room 2D109 and 2D114.
St. Vincent Urology Grand Rounds, first Tuesday, 5:30 p.m., St. Vincent Infirmary, Education Building, Room 159.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC-SOUTHWEST

Tumor Conference, November 6 and December 4, 7:00 a.m., St. Michael Hospital.
Chest Conference, November 20, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

THINGS TO COME

January 30-February 1

Southern Association for Vascular Surgery Annual Meeting. Cerromar Beach, Puerto Rico. 10.5 hours Category I AMA credit. Fee: $200.00 SAVS members, $275.00 nonmembers. For more information contact UAMS, Office of Continuing Medical Education for Physicians, 4301 West Markham Street, Little Rock, Arkansas 72201; 661-5000.

February 1

The Second Annual Imaging Seminar. Sponsored by the Radiology Associates, P.A. and the Continuing Education Department of St. Vincent Infirmary. Little Rock Hilton Inn. 5 hours Category I.

For more information contact Allan Elkins, Administrator, Radiology Associates, P.A., 500 South University, Little Rock; telephone 664-3914.

February 23-28

Seventeenth Family Medicine Review. Sponsored by the University of Kentucky College of Medicine. Three identical sessions: February 23-28; May 18-23; October 26-31. 50 AMA Category I and AAFP prescribed hours. Hyatt Regency Hotel, Lexington, Kentucky.

For further information contact University of Kentucky College of Medicine, Office of Continuing Education, 132 College of Medicine Office Building, Lexington, Kentucky 40536-0086; telephone 1-606-233-5161.

March 5-9

1986 Pan American Allergy Society Training Course and Seminar. Four Seasons Hotel, San Antonio, Texas. Approved for 31 hours AMA/PRA Category 1; 31 hours AAOA; 31 hours 2-D AOA. For further information contact Betty Kahler, Pan American Allergy Society, 229 Parking Way, Lake Jackson, Texas 77566; telephone 1-409-297-8964 or 1-409-297-4069.

March 13-16

Eighth Annual Seminar on Perinatal Medicine. Hotel Royal Plaza, Walt Disney World, Lake Buena Vista, Florida. 18.5 AMA Category I Credit. Fee: $350.00 before February 13; $375.00 after February 13. For more information contact UAMS, Office of Continuing Education for Physicians, 4301 West Markham Street, Little Rock, Arkansas 72201; telephone 661-5000.

March 24-29

Counseling Strategies for Physicians. Oahu, Hawaii. Sponsored by the University of Texas at Tyler and the University of Texas Health Science Center at Houston. Program is designed to introduce the latest techniques and research findings on matters that influence doctor-patient relationships. The program is approved for 17 hours AMA/PRA Category I credit. Registration fee is $325.00. For further information call 1-800-332-8747 and specify Program Code 975 DLB.

April 2-5

Symposium on Prevention of Infections in Pediatric Office Practice and Sixth Annual Pediatric Infectious Disease Seminar. Sponsored by the Health Science Center at Dallas. Hyatt Regency Hotel, New Orleans, Louisiana. 23 hours Category I, AMA. Registration Fee: Pre-registered $300.00; $225.00 residents; on site registered $325.00; $250.00 residents. For further information contact Marian Troup, Department of Pediatrics, University of Texas Southwestern Medical School, 5323 Harry Hines Boulevard, Dallas, Texas 75235; telephone 1-214-688-3439.

April 17-20

110th Annual Meeting of the Arkansas Medical Society. Theme is "Vascular Disease". Excelsior Hotel and Statehouse Convention Center, Little Rock.

April 17-19

Forty-Eighth Annual Meeting of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society. Broadwater Beach Hotel in Biloxi, Mississippi. 8 hours Category 1, AMA. For more information contact Ben A. Davis, Jr., CAE, Louisiana-Mississippi Ophthalmological and Otolaryngological Society, Post Office Box 12314, Jackson, Mississippi 39236-2314; telephone 1-601-956-7787.



PERSONAL AND NEWS ITEMS

1986 SHUFFIELD AWARD

Nominations for the 1986 Shuffield Award are now being accepted by the Committee on Public Relations. Deadline for nominations is March 1, 1986. Nominations may be made by county medical societies or individual Medical Society and Auxiliary members. The nominee must be a non-physician and the information should include reasons why the person should be considered, their achievements and contributions to health care, and biographical information. The award is named in honor of Drs. Joe and Elvin Shuffield for their many years of service to the Medical Society. The award will be presented at the Annual Session. Last year's winner was Mr. Dewey Lantrip of the Arkansas Chapter of the American Association of Retired Persons. Mail nominations to Arkansas Medical Society, 750 Plaza West Building, 415 North McKinley, Little Rock, Arkansas 72205.

DR. MADSEN ATTENDS CONFERENCE

Dr. Henrik Madsen, II, of Hot Springs, recently attended the annual meeting of the American Congress of Rehabilitation Medicine and the American Academy of Physical Medicine held in Kansas City.

DR. O'NEAL ELECTED OFFICER

Dr. Walter O'Neal of Little Rock has been elected vice president of the Medical Institution Network. The Network is a closed circuit cable television system for area hospitals.

DR. CARLSON RECERTIFIED

Dr. Kevin Carlson of DeQueen has been recertified as a diplomate of the American Board of Family Practice.

DR. HILL SPEAKS

Dr. Roger Hill of Jonesboro spoke at a recent meeting of the Heart Club of Jonesboro. The Heart Club is a support group sponsored by the American Heart Association. Dr. Hill's discussion was on balloon angioplasty.

DOCTORS PARTICIPATE IN DIABETES INFORMATHON

Dr. Lawson Glover and Dr. Peter Kohler of Little Rock recently participated in "Diabetes: Update '85 Informathon" on the Lifetime Network. The show, broadcast nationwide, allowed viewers to call a toll free number and have their specific questions on diabetes answered by a panel of physicians who specialize in diabetes treatment. Dr. Glover and Dr. Kohler answered questions from Arkansas viewers.

DR. ADAMSON GUEST SPEAKER

Dr. James Adamson, Jr., of Little Rock, spoke at a recent Independence County Medical Society meeting. Mrs. Jerry Blaylock, president of the Arkansas Medical Society Auxiliary, was a special guest at the meeting.

DR. WALLACE AND DR. FRIED ATTEND MEETING

Dr. Oliver Wallace of Green Forest and Dr. David Fried of Mena recently attended the Annual Scientific Assembly of the American Academy of Family Physicians. The meeting was held in Anaheim, California.

DOCTORS RECEIVE AWARDS

Dr. Ellery Gay, Jr., and Dr. H. A. Ted Bailey, Jr., of Little Rock, have each received the Honor Award from the American Academy of Otolaryngology—Head and Neck Surgery. Bestowed since 1934, the award recognizes those who have contributed service to the Academy without remuneration, such as presentation of an instruction course, scientific paper, or participation on a continuing medical education committee or faculty.

DR. SCOTT RETIRES

Dr. W. W. Scott of Pocahontas was recently honored by having "Dr. W. W. Scott Day" proclaimed by the mayor of Pocahontas. Dr. Scott was honored upon his retirement after 39 years of service in the medical profession.

DRS. MILES, WALDRON AND DENMAN SPEAK

Drs. Richard Miles, Bruce Waldron, and David Denman of Rogers recently discussed the medical aspects of AIDS and answered questions from the audience at a public forum in Rogers. The forum, sponsored by St. Mary's Hospital, was held at the First National Bank of Rogers.

DR. VOGEL ELECTED TO SERVE

Dr. Robert Vogel of Little Rock was elected president of the Arkansas Division of the American Cancer Society at the group's annual meeting

in Little Rock. Dr. Vogel succeeds Dr. Richard McKelvey from Clarksville.

DR. HAYNES NAMED FELLOW

Dr. W. Ducote Haynes of Little Rock was named a Fellow of the American College of Radiology during the group's annual meeting in Montreal.

DR. TEPLY SPEAKS

Dr. Joseph F. Teply of Jonesboro recently spoke to the Jonesboro Kiwanis Club. His topic was coronary surgery.

DR. SEMBRANO NAMED FELLOW

Dr. Romeo Y. Sembrano of Corning has been named a Fellow of the American Academy of Family Physicians. He has also been recertified as a diplomate of the American Board of Family Practice.

DR. TOWNSEND RECEIVES PLAQUE

Dr. T. E. Townsend of Pine Bluff was recently honored by the Jefferson County Chapter of the American Association of Medical Assistants. A plaque was presented to Dr. Townsend in appreciation for his longtime support of medical assistants.

DR. SMITH ELECTED CHAIRMAN

Dr. Mose Smith, III, of Little Rock has been elected chairman of the Arkansas Section of the American College of Obstetricians and Gynecologists. Dr. Smith has served as vice chairman for the past three years.

PHYSICIANS CONTRIBUTE TO NEW COMPLEX

A group of physicians in Searcy have contributed $10,000 to the new Sports Complex for the construction of a soccer field. The check was presented to the chairman of the Searcy Parks and Recreation Commission by Dr. Hugh Edwards on behalf of the doctors in the Doctors Building. Physicians who contributed were Drs. Hugh Edwards, Terry Green, David Staggs, Curtis Williams, Kenneth Meacham, Larry Weathers, C. E. Ransom, Dan Davidson, Edward Miedema, Gene Joseph, Glen Blue, Jim Lewis, Jim Golleher, Porter Rodgers, Jr., Jim Simpson, and Jay Bell.

DR. REYNOLDS NAMED CHIEF OF STAFF

Dr. Roland Reynolds of Newport has recently been elected Chief of Staff at Newport Hospital and Clinic. Dr. Reynolds served as the 1985 president of the Jackson County Medical Society.

DR. WESTBROOK SPEAKS

Dr. Kent Westbrook of Little Rock recently spoke to the Pine Bluff Kiwanis Club about the Arkansas Cancer Research Center where he serves as director.

DOCTORS PARTICIPATE IN HEALTH FAIR

Dr. Bruce Leipzig of Little Rock and Drs. Michael Stair and Dale Fuller of North Little Rock recently participated in the Cancer Awareness Fair at North Little Rock Memorial Hospital. The physicians lectured on hoarseness, colorectal cancer, and breast self examination.

DRS. PEARCE AND BRADLEY PARTICIPATE IN PROGRAM

Drs. Larry Pearce and Joe Bradley of Fort Smith participated in a one-night program called, "Medicine, Psychiatry, Psychology and Religion" at Harbor View Mercy Hospital. The program was co-sponsored by Westark Community College.

DOCTORS APPOINTED COUNTY HEALTH OFFICERS

Dr. C. P. McCarty of Helena was recently appointed as a Phillips County health officer by the State Board of Health to replace the late Dr. Bernard Capes of West Helena. Dr. Ralph M. Maxwell of Monticello was appointed to serve as the Drew County health officer, replacing Dr. Andrew David.

PHYSICIANS SPEAK AT CANCER SYMPOSIUM

The Fourth Anuual Cencer Symposium, sponsored by the Arkansas Chapter of the American Cancer Society and held recently in El Dorado, featured several Arkansas physicians. Those physicians included Drs. Moises Menendez, John Henry Moore, Srini Vasan, W. R. Scurlock of El Dorado, Dr. Fernando Padilla of Little Rock, Dr. Ron Baldwin of Magnolia, and Dr. William Joe James of Pine Bluff.

DR. RIDDELL IN RUSSELLVILLE

Dr. C. Michael Riddell, a specialist in Obstetrics and Gynecology, has joined the Millard-Henry Clinic in Russellville.

DR. CROW APPOINTED TO COUNCIL

Dr. Asa Crow of Paragould has been named to the Indigent Health Care Advisory Council by Governor Bill Clinton. The creation of the sixteen member council resulted from a task force report that Dr. Crow helped draft last year. Other physicians appointed to the Council are Drs. Ben Saltzman, Harry Ward, Bob Fiser and Frank Miller all of Little Rock.

DR. GUIN RECEIVES $1.14 MILLION GRANT

Dr. Jere Guin of Little Rock, professor and chairman of the Dermatology Department of the University of Arkansas College of Medicine, has

received a $1.14 million grant from the National Cancer Institute. The grant is for a five-year study of basal cell carcinomas. Arkansas was chosen for the research because of the high incidence of skin cancer at lower latitudes in the United States, especially among whites who are exposed often to the sun. Dr. Guin is a member of the Advisory Council of the Arkansas Cancer Research Center.

DR. FOTIOO HONORED

Dr. George Fotioo of Hot Springs was honored recently at the annual Recognition Luncheon of the Senior Companions Program of Garland County. Dr. Fotioo was cited for providing all the physician examinations for senior companions and for donating 90% of his fees back to the program. The Senior Companions Program acts as an alternative to nursing home care by bringing together reasonably healthy elderly people who serve as companions to the frail, older, homebound person.

DR. JONES WRITES COLUMN

Dr. E. J. Jones of Batesville is one of many physicians around the State who have been donating their time to write articles for their local newspapers. Dr. Jones writes a column called, "For Women Only" for the *Batesville Daily Guard*.

SURGEONS SELECTED FOR MEMBERSHIP

Sixteen surgeon-members of the Medical Society were accepted as Fellows of the American College of Surgeons at a recent meeting in Chicago. They are: Dr. John Bubak, Berryville; Dr. Robert C. Tommey, El Dorado; Drs. Craig J. Brown and C. R. Magness of Fayetteville; Drs. James W. Campbell and J. Kelly Mahone of Hot Springs; Dr. Robert G. Lassonde, Jonesboro; Drs. A. David Hall, Thomas H. Hoffmann, Richard E. McCarthy and G. Richard Westerman, Little Rock; Dr. Kenneth E. Murphy, Malvern; Dr. Lee A. Forestiere, Pine Bluff, and Dr. Michael C. Reese, Rogers.

DR. JANSEN ELECTED

Dr. G. Thomas Jansen of Little Rock has been elected president of the American Board of Dermatology, an examining and certifying body for the specialty of Dermatology.

Dr. Jansen is the current chairman of the executive committee. He served as director of the board in 1977.



NEW MEMBERS

DR. JOHN W. WATSON

Dr. Watson, a native of Needles, California, has joined the Faulkner County Medical Society.

He is a 1961 graduate of the University of Arkansas at Fayetteville and a 1968 graduate of the University of Arkansas College of Medicine. He served his internship and residency at University Hospital in Little Rock. Dr. Watson has been on the faculty at the University of Arkansas College of Medicine since 1977.

Dr. Watson is associated with the Conway Medical Group where he specializes in Internal Medicine and Cardiology. He is certified by the American Board of Internal Medicine.

* * * *

The Garland County Medical Society has two new members:

DR. AL AQUINO

Dr. Aquino is a native of Monterray, Mexico.

He is a 1960 graduate of the University of Nuevo Leon and a 1976 graduate of the Facultad de Medicina de la Universidad de Nuevo Leon. He served his internship at Loyola University Medical Center in Chicago and his residency in Pediatrics and Anesthesiology at Parkland Memorial Hospital in Dallas. He has been an assistant professor of Anesthesiology at the University of Texas and the University of Arkansas College of Medicine.

Dr. Aquino's office for the practice of Anesthesiology is at 229 Hazel Street in Hot Springs.

DR. LAURA FRANCES CLAYTON

Dr. Clayton, a native of Houston, Texas, graduated from the University of Texas at Austin in 1974 and the University of Texas Southwestern Medical School in 1978. She served her internship

and residency at Parkland Memorial Hospital in Dallas.

Dr. Clayton has also served as an assistant clinical professor at the University of Arkansas College of Medicine. She is certified by the American Board of Anesthesiology.

Dr. Clayton specializes in Anesthesiology. Her office is at 229 Hazel Street in Hot Springs.

* * * *

DR. GARY R. VART

Dr. Vart has recently joined the Hot Spring County Medical Society. He is a native of Philadelphia, Pennsylvania.

Dr. Vart is a 1955 graduate of the University of Pennsylvania and a 1959 graduate of the University of Virginia School of Medicine. He served his internship with the Jefferson Medical College Hospital and his residency in Obstetrics and Gynecology at Frankford Hospital in Philadelphia.

Dr. Vart's office is at 1002 Schneider Drive in Malvern where he specializes in Obstetrics and Gynecology. He is certified by the American Board of Obstetrics and Gynecology.

* * * *

The Pulaski County Medical Society has seven new members:

DR. JAMES ARONSON

Dr. Aronson is a native of Pittsburgh, Pennsylvania.

He is a 1971 graduate of Princeton University and a 1975 graduate of the University of Pittsburgh School of Medicine. His postgraduate training in surgery was at the Maine Medical Center in Portland, Maine. He served an Orthopaedic residency at Duke University Medical Center in Durham, North Carolina, and a Fellowship in Pediatric Orthopaedics at the Alfred I. duPont Institute in Wilmington, Delaware.

Dr. Aronson is associated with Arkansas Children's Hospital, where he specializes in Pediatric Orthopaedics.

DR. FREDERICK G. GUGGENHEIM

A native of Chicago, Dr. Guggenheim graduated from Yale University in 1957. He is a 1961 graduate of the Columbia University College of Physicians and Surgeons. Dr. Guggenheim's postgraduate training in Psychiatry was served at Bellevue Hospital in New York City and Strong Memorial Hospital in Rochester, New York.

Board certified in Psychiatry and Neurology, Dr. Guggenheim is an instructor in the Department of Psychiatry and Behavioral Sciences at the University of Arkansas College of Medicine.

DR. DAVID R. TAYLOR

Dr. Taylor is a native of Batesville. He graduated from the University of Arkansas in 1973 and the University of Arkansas School of Medicine in 1977. He served his internship and residency in Obstetrics and Gynecology at University Hospital in Little Rock.

Dr. Taylor's office address is 1224 Braden, Jacksonville. He specializes in Obstetrics and Gynecology. He is board certified.

DR. DAVID BECTON

Originally from Little Rock, Dr. Becton is an assistant professor of Pediatrics at the University of Arkansas for Medical Sciences. He is a 1975 graduate of Hendrix College in Conway and a 1979 graduate of the University of Arkansas College of Medicine. His postgraduate training in Pediatrics was at the University of Arkansas Medical Center.

Dr. Becton is board certified in Pediatrics. He is associated with Arkansas Children's Hospital.

DR. MORRIS KLETSEL

A native of Mexico City, Dr. Kletsel is chief of the Hematology/Oncology Pediatric Department at Arkansas Children's Hospital.

He completed his undergraduate training in 1966 at Escuela Nal Preparatoria. He is also a 1971 graduate of Facultad de Medicina de la Universidad Nacional Autonoma de Mexico. Dr. Kletsel's postgraduate training in Pediatrics was at the University of Tel Aviv and the University of Arkansas Medical Center. He served a residency in Hematology at the M. D. Anderson Hospital and Tumor Institute in Houston, Texas.

Dr. Kletsel is board certified in Pediatrics. He practices at Arkansas Children's Hospital.

DR. ROBERT M. SEARCY

Dr. Searcy is a native of Hot Springs. He is a 1976 graduate of the University of Arkansas and a 1980 graduate of University of Arkansas College of Medicine.

His postgraduate training in Internal Medicine and Pulmonary Diseases was at the Mayo Clinic in Rochester, Minnesota, and Johns Hopkins University School of Medicine in Baltimore, respectively.

Dr. Searcy is board certified in Internal Medicine. His office is at 10001 Lile Drive in Little Rock, where he specializes in Pulmonary Diseases.

DR. HOMER L. FLEISHER, III

Dr. Fleisher is a new resident member of the Pulaski County Medical Society. A native of Chicago, he completed his pre-medical education at the University of Illinois and graduated from the Southern Illinois School of Medicine in 1980.

He is presently serving a Fellowship in Vascular Surgery at the University of Arkansas for Medical Sciences and John L. McClellan Veterans Administration Hospital.

DR. RALPH BARD

Dr. Bard has recently joined the St. Francis County Medical Society. He is a native of Memphis, Tennessee.

Dr. Bard is a 1972 graduate of Georgia Tech University and a 1980 graduate of the University of Tennessee Center for Health Sciences. He served his internship and residency at Erlanger Hospital in Chattanooga, Tennessee. Dr. Bard's specialty is General and Vascular Surgery. His office is at 1740 Lindauer Road, Forrest City.

OBITUARY

DR. ROBERT D. DICKINS

Dr. Robert Dickins of Pine Bluff died November 25, 1985. He was born February 25, 1904, in Greenwood, Mississippi.

Dr. Dickins was a graduate of the University of Mississippi at Oxford and Vanderbilt University Medical School at Nashville, Tennessee. He served internships at Touro Infirmary in New Orleans and Henry Ford Hospital in Detroit.

Dr. Dickins practiced for three years in Monticello and at the Gamble Brothers Clinic in Greenville, Mississippi. While in the Army Air Corps during World War II, he served as Chief of Surgery at the Army Air Force Bases in Altus, Oklahoma, and Big Springs, Texas.

After retiring from the Army with the rank of major in 1946, Dr. Dickins began practicing in Pine Bluff, where he practiced until a few weeks prior to his death.

Dr. Dickins was a former Chief of Staff and Chief of Surgery at Jefferson Regional Medical Center and a founding member of the Southwest Surgical Congress.

Survivors are his wife, Anne Edwards Dickins; two sons, Drs. John R. E. and Robert D. Dickins, Jr., both of Little Rock; and five grandchildren.

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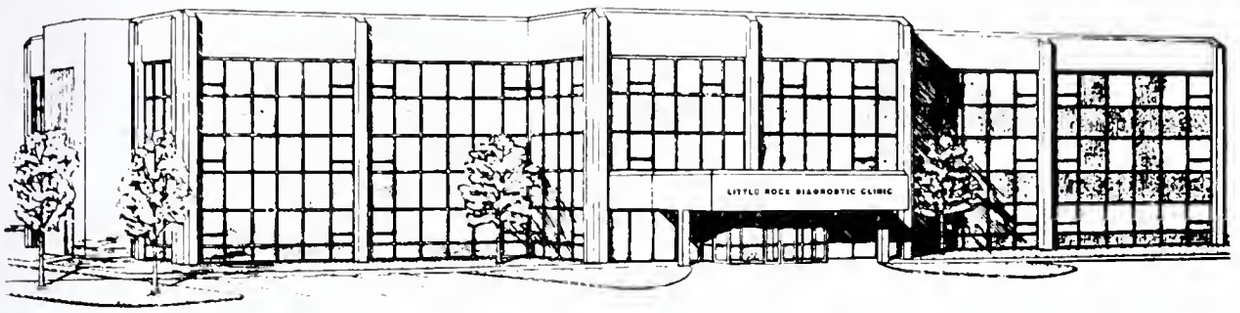
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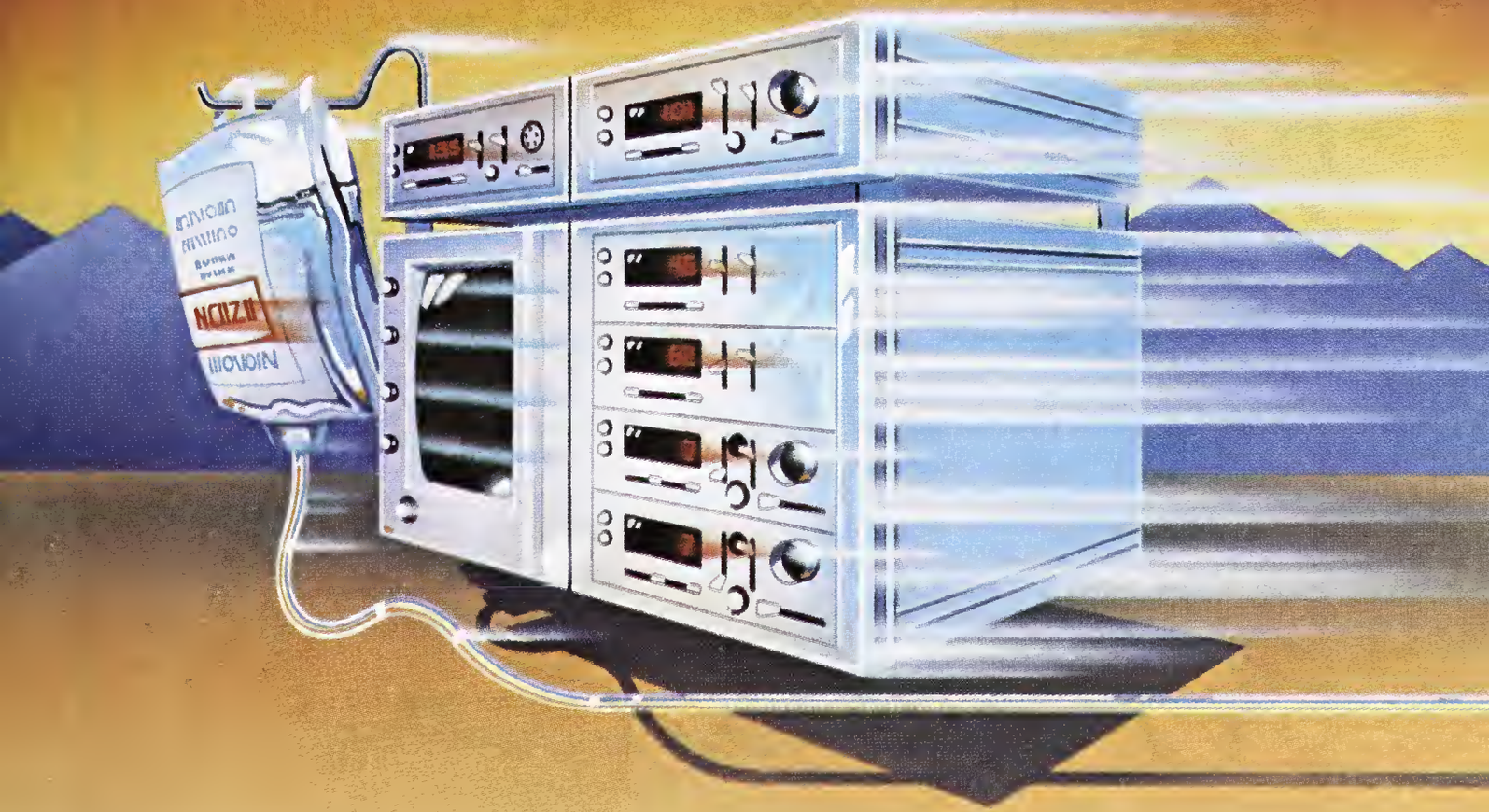
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MALVERN. Population 10,163; trade area population 26,918. Malvern is located in central Arkansas, 45 miles southeast of Little Rock. No orthopaedic surgeons or pediatricians currently practice in Malvern. Opportunities exist to establish a solo practice with assistance from a hospital sponsored start-up contract. Office space is available in the hospital owned clinic adjacent to the 77-bed county hospital. Malvern has an excellent school system with an enrollment of 2,969, a country club with a nine-hole golf course, and numerous civic clubs.

MENA. Population 5,132; county population 16,984. Mena is 82 miles from Fort Smith and 77 miles from Hot Springs. There is a very good opportunity for a practice in Mena. The town presently has four family practitioners, three general practitioners, and one radiologist. The doctor feels there is a desperate need for specialists, i.e., surgeons, internists, obstetricians/gynecologists, orthopaedists, pediatricians, urologists, and family practitioners. There is a new 57-bed, all private rooms, accredited general hospital and two nursing homes with a total bed capacity of 174.

POCAHONTAS. Opportunities exist for two to three family practitioners in this northeast Arkansas community of 6,000. Trade area population approximately 25,000. Two physicians have retired this year with another one expected to retire before the first of next year. A clinic is now available for a minimal investment for a family practitioner ready to assume a busy practice. Specialists practicing in the community include: two general surgeons, one cardiologist, seven family physicians with part-time coverage by an orthopaedic physician, urologist, and pathologist. The hospital emergency room has coverage each night, weekends and all holidays.

BULL SHOALS. Opportunities to practice in Bull Shoals include general and family practice, pediatrics, internal medicine, urology, dermatology, and ophthalmology. The 48-bed Bull Shoals Community Hospital is a full service facility built in 1975 and includes a 4-bed CCU unit with excellent ancillary services. Laboratory includes tissue lab, a complete respiratory service and a well staffed and equipped physical therapy department. Ambulance and home health services are also provided. Fully equipped clinic space is available with financial arrangements tailored to meet the physician's needs. Other area hospitals include the 59-bed Central Ozarks Medical Center 15 miles south in Yellville and the Baxter General Hospital with 133 beds located 15 miles east in Mountain Home.

Located in the Ozark Mountains, the community population is 1,312 with a service area population of 15,000.

HOT SPRINGS. Population 36,228. Ouachita Memorial Hospital is currently seeking a pathologist. Ouachita Memorial in Hot Springs is a 155-bed general, acute care facility. It is a full service facility with a comprehensive range of medical/surgical services including a 24-hour emergency department. The hospital has a diverse medical staff with a wide range of specialty services. Ancillary services include cardiac catheterization, and nuclear medicine. In addition, OMH offers a broad spectrum of specialized services including outpatient surgery, hemodialysis and peritoneal dialysis and progressive coronary care.

For more information contact the Physician Placement Service, Arkansas Medical Society, Post Office Box 1208, Fort Smith, Arkansas 72902.

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BEARDEN. An excellent opportunity exists for a family physician. The town is currently without a physician and the nearest medical care is 15 miles away. The city owned clinic is capable of housing two physicians. The local ambulance service provides emergency transportation to surrounding hospitals. Area hospitals include: 51 bed Dallas County Hospital, 14 miles away in Fordyce, and Ouachita County Hospital with 150 beds, 16 miles away in Camden. The community is 81 miles south of Little Rock with a population of 1,191 and a service area of 3,500.

BLYTHEVILLE. Blytheville has a population of approximately 25,000 with a trade area population approximately 70,000-100,000. Blytheville is located in northeast Arkansas approximately 60 miles north of Memphis, Tennessee on Interstate 55. There is a definite need for another pediatrician. Although there are two full-time pediatricians in Blytheville, approximately one-third to one-half of the pediatric care occurs outside the Blytheville area. One of the pediatricians is interested in obtaining an associate immediately.

MARIANNA. Population 6,100; trade area population about 20,000. Opportunities exist in family practice, general practice, and internal medicine. Office space is available. Opportunities exist for private practice or to join a government funded clinic on a salaried basis. There is a 25-bed acute care hospital in Marianna.

SILOAM SPRINGS. Siloam Springs is located in the extreme northwest corner of the state. Population 8,000. Service area 60,000. Opportunities exist in obstetrics/gynecology and orthopaedics. Financial arrangements are available depending on experience and education. A full service hospital offers a full range of ancillary services including home health care.

FORREST CITY. Forrest City is located on Interstate 40, 45 miles from Memphis, Tennessee, and 90 miles from Little Rock. Population approximately 13,000; trade area population approximately 70,000. The opportunity exists for a family practitioner to join two established family practitioners. An initial salary position exists as an option. There is a full service, 100-bed hospital with 17 physicians on the active medical staff.

BRINKLEY. Opportunities exist in Brinkley in family practice and internal medicine. Population 5,700; service area population 30,000. Brinkley is located on Interstate 40 midway between Little Rock and Memphis, Tennessee.

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The Delta Medical Center was acquired by Community Care Systems, Inc., in 1983. A 28-bed nursing home is at the same location. The hospital serves the residents of Brinkley and draws patients from the entire county as well as parts of Prairie, St. Francis, Woodruff, and Lee Counties.

MANILA. Opportunities exists in Manila for physicians in the fields of general practice, family practice and/or internal medicine. Manila, population 2,600, is serviced by the Buffalo Island Community Hospital, a 32-bed primary care facility. National Health Care, the owners of the hospital, offer a substantial first year salary, office space at no charge for one year and funds for necessary office personnel. Reasonable moving expenses will be paid. The hospital has on its staff physicians who practice in Leachville, Monette and Caraway, each approximately 10 miles away. Other hospitals are in Jonesboro approximately 35 miles away, Osceola and Blytheville approximately 18 miles away.

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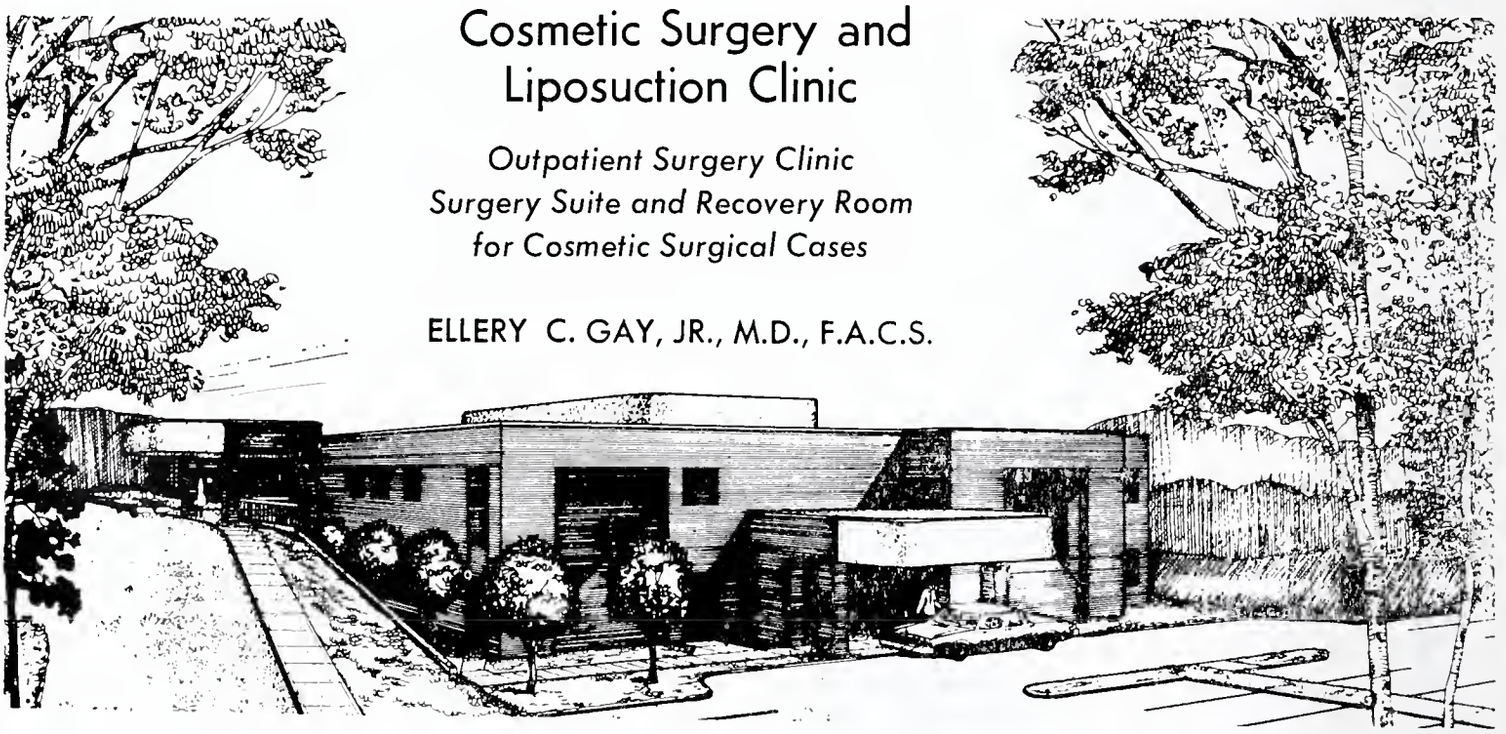
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February 1986

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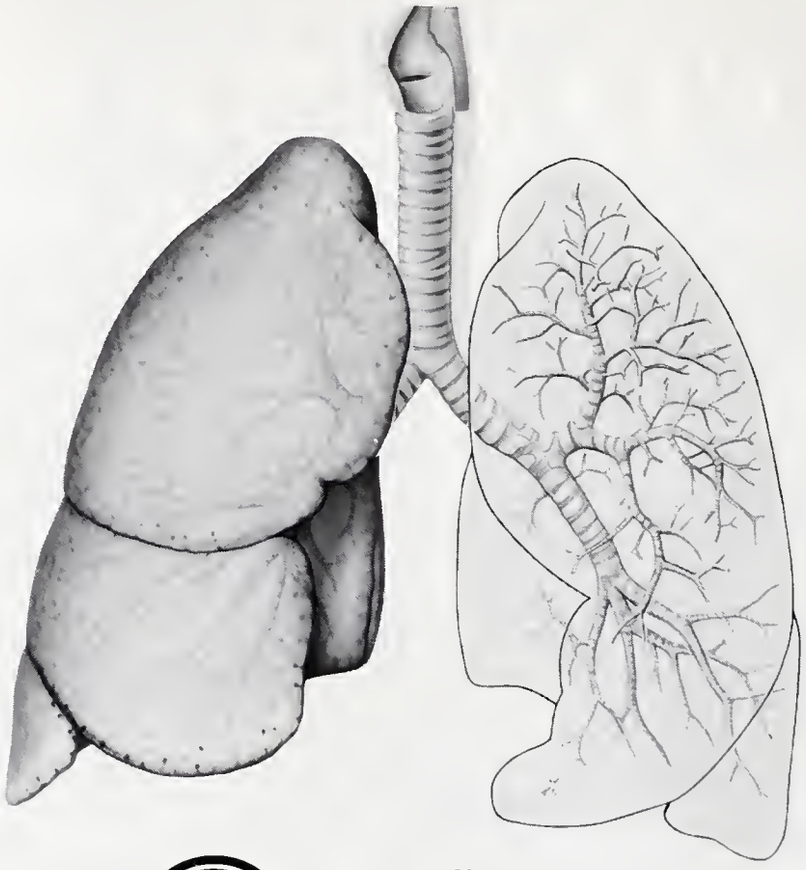
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Brief Summary Consult the package literature for prescribing information

Indications and Usage Ceclor* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: *General Precautions* — If an allergic reaction to Ceclor* (cefaclor, Lilly) occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest* tablets but not with Tes-Tape* (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy — Pregnancy Category B — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor* (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were D 18, D 2D, D 21, and D 16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 7D).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 1DD). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 2DD patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 5D patients) and genital pruritus or vaginitis (less than 1 in 1DD patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic — Slight elevations in SGDT, SGPT, or alkaline phosphatase values (1 in 4D).

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 4D).

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 5DD) or abnormal urinalysis (less than 1 in 2DD).

[D617B2R]

Note Ceclor* (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (Intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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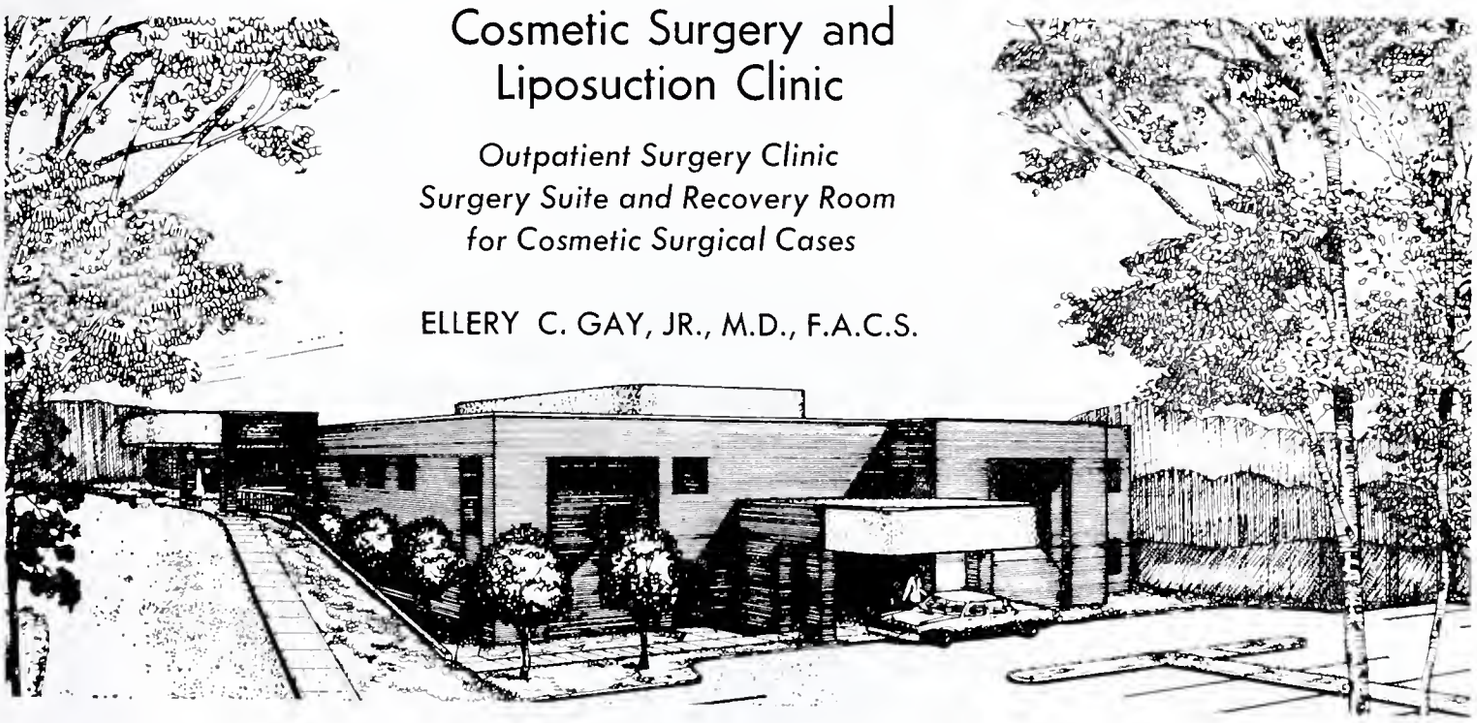
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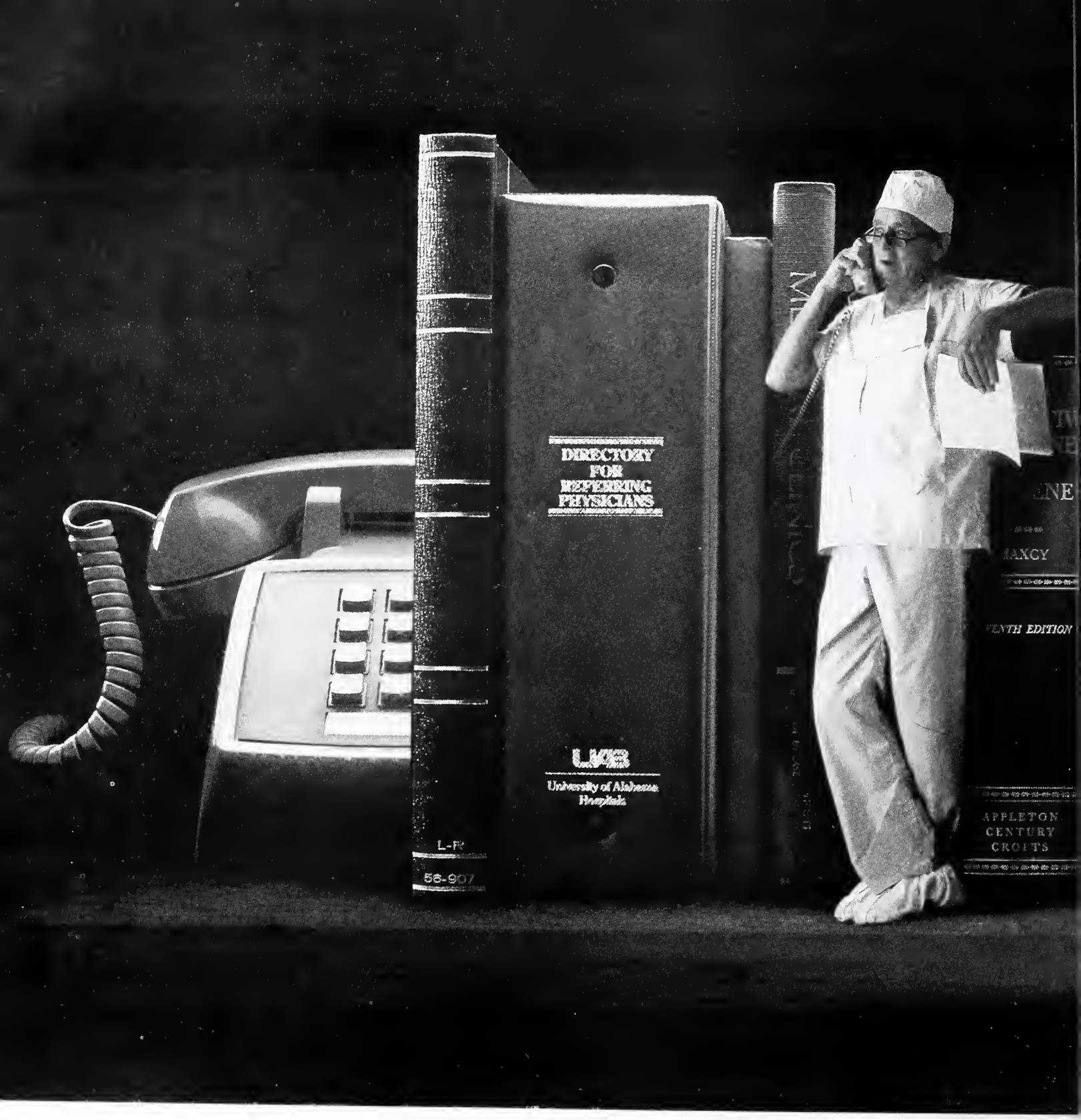
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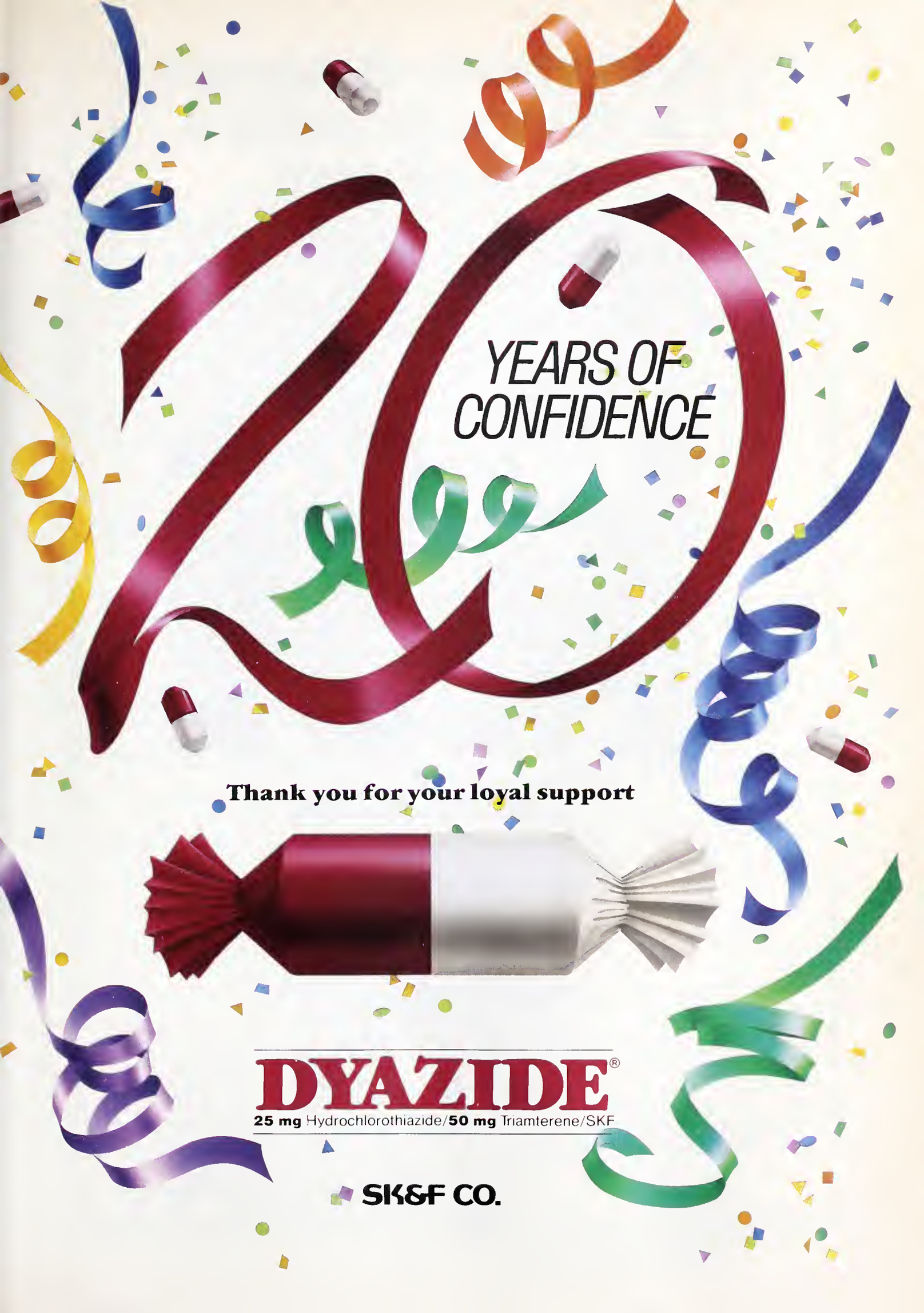
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Prenatal Diagnosis of Omphalocele

Joe A. Cloud, M.D.,* David Taylor, Major, USAF MC,**
Mike Smerud, Captain, USAF MC,*** T. Angtuaco, M.D.,****
and Donald R. Mattison, M.D.*

INTRODUCTION

Omphalocele, a central defect of the abdominal wall, results in the protrusion of part of the intestine or other abdominal viscera through this defect at the umbilicus.[1,2,3] The protruding viscera are covered by a transparent membrane composed of both amnion and peritoneum. An omphalocele, which represents the persistence of body stalk in the region normally occupied by the somatopleure, can include a spectrum of anatomic defects in the abdominal wall. The entire ventral abdominal wall can be involved, or the defect may only involve a small region where the cord joins the skin of the abdomen.

Gastroschisis is a separate entity from omphalocele in that the abdominal wall completes its development, but a defect remains at the base of the umbilical stalk. The small bowel which projects through the defect is not rotated and lacks secondary fixation to the dorsal abdominal wall. Omphalocele and gastroschisis can be distinguished by the presence or absence respectively of a covering membrane.

The incidence of omphalocele is variously reported at between 1:3,000 and 1:10,000 live births whereas gastrochisis is thought to occur less frequently.[1,2] Important clinical differences in the manifestations of the two conditions occur. Omphalocele is associated with a higher incidence of other anomalies, a higher mortality rate, and larger defects. Gastroschisis is usually associated with immaturity and low birth weight. Both abdominal wall defects have been associated with prenatal exposure to the printing industry.[10]

*Department of Obstetrics and Gynecology, University of Arkansas
**Department of Obstetrics and Gynecology, Little Rock Air Force Base, Arkansas.
***Department of Radiology, Little Rock Air Force Base, Arkansas.
****Department of Radiology, University of Arkansas for Medical Sciences.
Address correspondence and reprint requests to: Dr. Donald R. Mattison, Division of Reproductive Pharmacology and Toxicology, Department of Obstetrics and Gynecology, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 518, Little Rock, Arkansas 72205. Phone (501) 661-5632.

This report describes the prenatal diagnosis of omphalocele in a fetus exposed prenatally to anesthetic gases and paint stripping solvents and subsequent integrated obstetrical-pediatric management of the delivery and postnatal care.

CASE REPORT

A 28 y/o, G2 P1, white, female operating room nurse with last menstrual period on 4/8/84 and estimated date of delivery of 1/13/85 was referred to the University Hospital at 33.5 wks. gestation. She had vaginal bleeding with spontaneous rupture of membranes 4 hours prior to transfer. An ultrasound obtained at that time to rule out placenta previa, had suggested the diagnosis of an omphalocele. Her blood type was A+ with a negative indirect Coombs' test. Family history was completely negative for abdominal wall defects. Personal history was positive for bilateral ureteral duplication with resultant numerous urinary tract infections. She had a negative prenatal course prior to presentation. The mother worked as an operating room nurse with exposures to anesthetic gases. In addition, the father of the child worked as a furniture refinisher. During the first trimester of pregnancy most of his work was performed in their house.

She was admitted for labor and delivery and rupture of membranes, confirmed by positive fern and nitrazine tests. Admitting vital signs were: BP 112/70, temperature 98.8, pulse 84, respiration 24. A high risk pregnancy ultrasound evaluation was obtained which revealed a single fetus in cephalic presentation. The placenta was posterior and grade II. The fetal biparietal diameter was 77 mm, and femoral length was 58 mm, both of which are at the 50th percentile for 30 weeks of gestation. There was an anterior abdominal defect which presented a herniated liver, stomach and small bowel (Figures 1-4). The

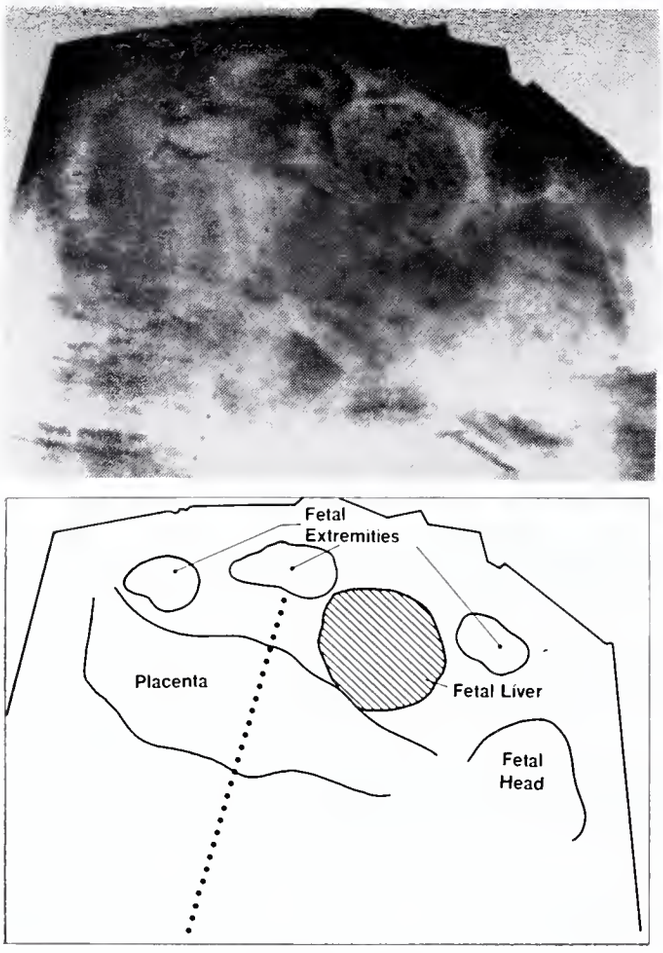


Figure 1 A and B.
Sagittal static scan showing the fetal head down in the pelvis. The posterior placenta and the herniated fetal liver anteriorly.

kidneys and bladder were normal, and there were no abnormalities in the spine. A membrane was demonstrated surrounding the extruded intra-abdominal contents.

After consultation and coordination with the pediatric staff, the patient was taken to the operating room where she delivered a 1780 gm female infant via a primary, classical cesarean section. At delivery, there was an abdominal wall defect measuring approximately 8 cm in diameter with an intact membranous sac which contained the small bowel, liver and stomach. The infant's Apgar scores were 7 at one minute, and 9 at five minutes. The infant was wrapped in sterile saline soaked dressings and transferred to Arkansas Children's Hospital.

The mother did very well post operatively. She was advanced on her diet as tolerated and had normal bowel and bladder function. She was discharged on the 3rd post operative day with a hematocrit of 37.7%.

After being transferred to Children's Hospital, the infant underwent surgery and a Marlex prosthesis was fastened to the fascial margins. She was

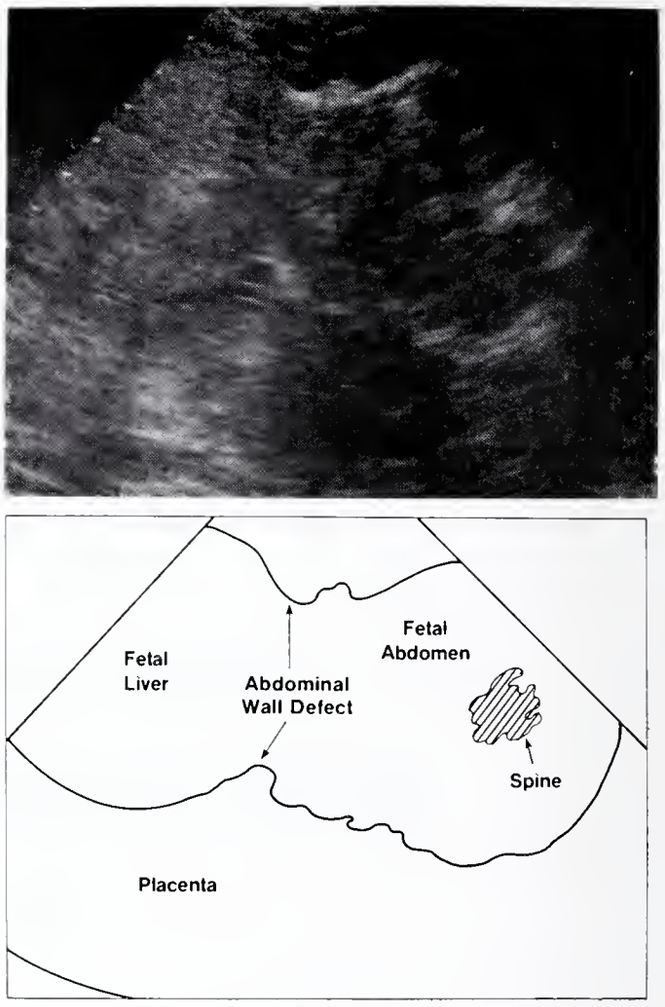


Figure 2 A and B.
Transverse real time image demonstrating the anterior abdominal wall defect with the liver outside the abdominal cavity.

subsequently treated by a staged silo closure which was completed on the 7th day of life. She subsequently underwent heart surgery for closure of a patent ductus arterious.

DISCUSSION

There have been several reports in the literature of prenatal diagnosis and subsequent management of omphalocele.[1-9] Antenatal diagnosis of this and other abdominal wall defects will undoubtedly continue to increase as the technology and sophistication of ultrasonography continue to improve. Prenatal diagnosis of an infant with an omphalocele can be very beneficial for the infant in that the obstetrician can plan a delivery when pediatricians are present for resuscitation, evaluation, and surgical correction. In addition, both parents can be fully informed and prepared for the postdelivery care required by their child.

The method of delivery of an infant with omphalocele remains controversial. Kirk and Wah[1] reported one hundred and twelve cases of infants who had omphalocele or gastroschisis.

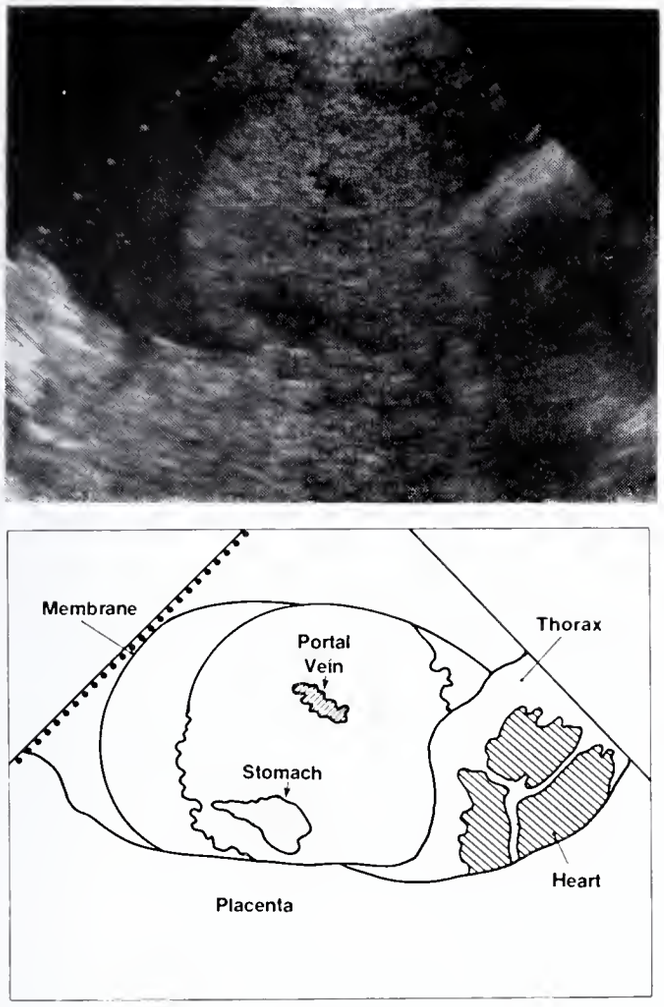


Figure 3 A and B.

Real time image taken just above the image shown in Figure 2 showing the membrane, fetal stomach and liver anterior to the heart which remained within the thoracic cavity.

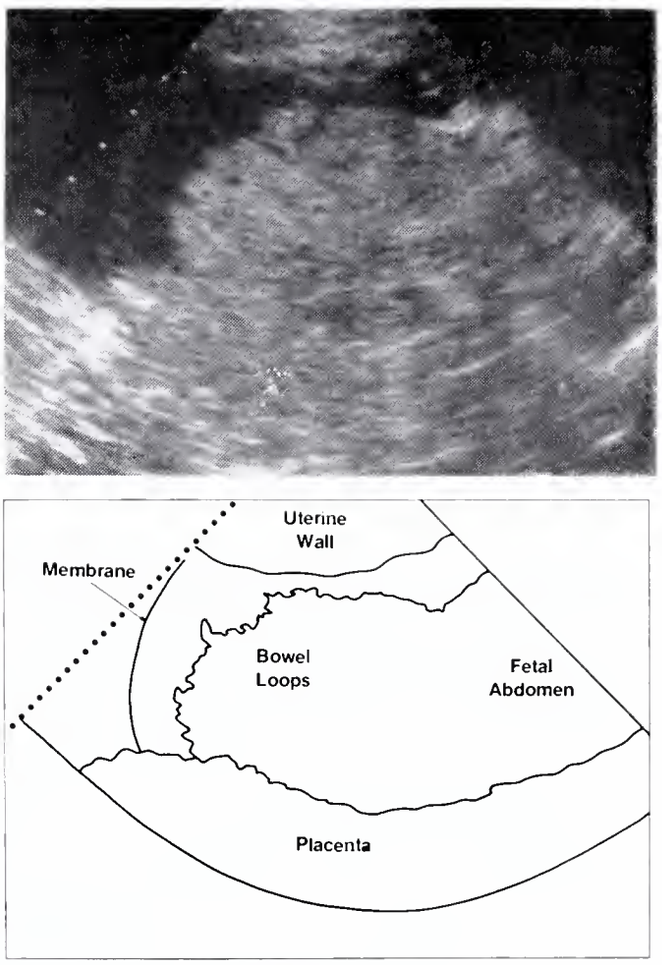


Figure 4 A and B.

Image obtained just below the image shown in Figure 2 showing collapsed bowel loops surrounded by membrane outside the abdomen.

Their conclusion was that vaginal delivery of infants with abdominal wall defects does not compromise further management of the infant, and the proper selection of cases for delivery by elective cesarean section awaits further clarification. Others have reported that elective cesarean section has benefited infants with defects causing dystocia, and therefore, all infants with abdominal wall defects fall into this category.

There is no doubt that since the first successful closure of an omphalocele, reported by Hamilton in 1806, that diagnosis and treatment have advanced. However, many controversies still exist despite some authors' attempts to define a systematic approach to treatment, taking into consideration such factors as: "is the liver eviscerated?, is a sac remnant present?, size of defect, is the heart out of the chest?, are there associated anomalies?"[2]

There have been reports associating abdominal wall defects with maternal exposure in the printing industry.[10] In addition there is some suggestion of increased frequency of congenital malformations in the offspring of women occupationally exposed to anesthetic gases during gestation.[11-14] These exposures would have to occur prior to 10 weeks. There is no question however of a decrease in birth weight and an increase in the frequency of spontaneous abortion in women exposed to anesthetic gasses during the first trimester.

Regardless of the method chosen to treat the omphalocele, early detection by ultrasound allows the opportunity to present the case to the family, and pediatricians, so that a logical plan can be derived. Using the team approach for the management of this difficult clinical problem will provide for the optimum outcome.

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Endoscopic Gynecologic Surgical Procedures

William B. Harrell, M.D.,** and Stephen R. Brown, M.D.***

Endoscopy was first reported in the medical literature in the early 19th century, when crude instruments were used to examine the vagina and uterus. The 20th century brought improvements in quality as well as in new instruments and light sources, which enabled physicians to photograph pelvic pathology and to perform certain operative procedures. In 1937 John C. Ruddock described, for the first time, the visualization of the pelvic organs with the peritoneoscope and the indirect lighting source.[1]

By the early 1940s a number of contributors had extended the usefulness of peritoneoscopy. While Ruddock had reported only visualizing with the device, operative peritoneoscopy began with groups in Michigan and Arkansas in 1939, results of which were reported in subsequent years. Power and Barnes at University Hospital, University of Michigan Medical School, in 1941,[2] and Donaldson, Sanderlin, and Harrell at University Hospital, University of Arkansas Medical School, in 1942,[3] described techniques of fulgurating the fallopian tubes through a peritoneoscope to sterilize the female. The University of Arkansas group developed a peritoneoscopic method of suspending the uterus without open abdominal incision, using a special needle with the peritoneoscope. It is of interest that the Arkansas group exhibited, at the annual meeting of the Southern Medical Association in Louisville, Kentucky, in 1940, a human-sized clay mannequin with rubber diaphram to represent the abdominal wall.[4] The mannequin contained simulated female organs with which to demonstrate the technique of introducing the peritoneoscope as it was used in various operative procedures. Decker subsequently developed an instrument, called the culdoscope, similar to the peritoneoscope, inserted through the posterior vaginal vault with the patient in a knee-chest position.[5]

Harrell, in 1941, developed an instrument for direct visualization of the pelvic organs, which he called the pelvioscope.[6] This open pelvioscopy offered several advantages over the closed technique of peritoneoscopy. With the pelvioscope, a uterine suspension could be performed concurrently with other operative procedures such as tubal ligation and, occasionally, an appendectomy. An early such appendectomy was performed in 1942 at the Provincial Hospital in Aguadulce, Republic of Panama (Figs. 1-2). The open technique, much simpler than the closed approach, also seemed to have fewer contraindications. This technique, however, may require slightly more operating time because of the necessity of placing a suture in the peritoneum, fascia, and skin.[7] In recent years, open laparoscopy has been recognized as having fewer contraindications, being easier to learn, and seeming to be safer than the closed technique.[8]

The new fiberoptic cold light system in the 1960s popularized endoscopy of the pelvic area. Modification of the Ruddock peritoneoscope led to development of the laparoscope. With an increase in family planning practices, laparoscopic sterilization in the female, as well as diagnostic laparoscopy, became popular in the 1970s.[9] Steptoe then began using the laparoscope to recover the mature oocyte before spontaneous ovulation occurred.[10] This led to the development of *in vitro* fertilization and embryo transfer in England. In the future, ultrasound technique involving guidance of a trans-abdominal needle directed at the ovary may obviate the need for laparoscopy in harvesting eggs.[11]

Westin first visualized the fetus in utero with a transcervical hysteroscope in 1954.[12] Fetoscopy has developed into an important means of diagnosing congenital abnormalities, of studying the biochemical profile and hematologic status, and of aiding therapeutic intervention in utero. In recent years, when ultrasound imaging has become a primary diagnostic tool, fetoscopy has remained important in fetal blood sampling, fetal skin biopsy, and fetal liver biopsy, in doubtful diagnoses, and in identifying certain small structural abnormalities that ultrasound cannot reveal in the early second trimester.[13] In 1984 Nordenskjöld and Gustavii, of University Hospital, Lund, Sweden, reported a technique for chorionic biopsy under direct vision, by inserting a fetoscope into the extra-amniotic space during continuous saline infusion.[14] This technique can be used in the first trimester of pregnancy, weeks earlier than amniocentesis can be done, and with better results than ultrasound-guided aspiration.

From the Gynecological Service, St. Michael Hospital, Texarkana, Arkansas and the Wadley Hospital, Texarkana, Texas.
*Read at Mexico Inter Chapter of American College of Surgeons, Monterrey, Nuevo Leon, Mexico, March 15, 1985.
**P. O. Box 2078, Texarkana, Texas 75501.
***1203 Main, Texarkana, Texas 75501.

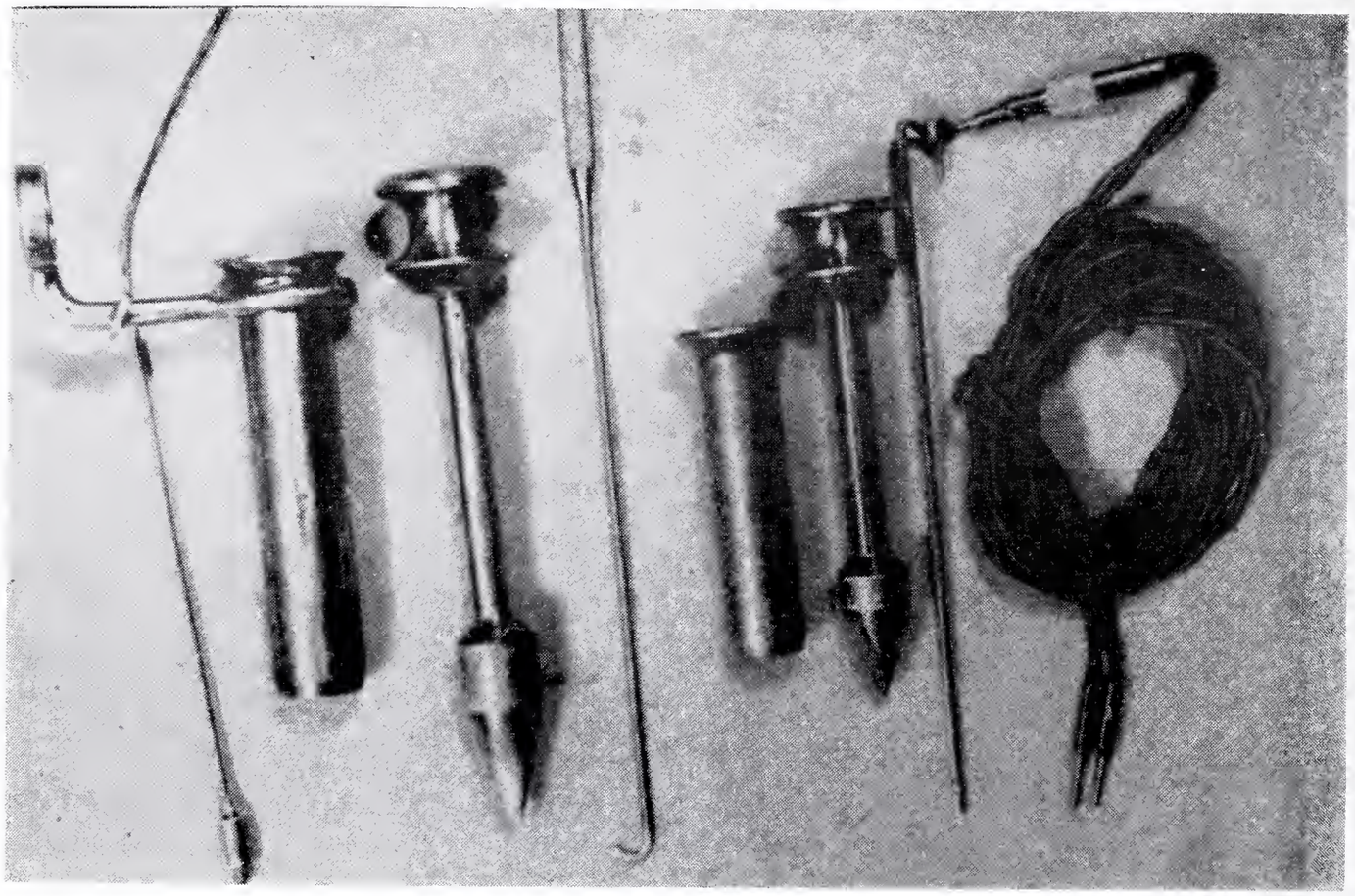


Figure 1.
Pelvioscope, direct light source, and instrument to manipulate pelvic organs.

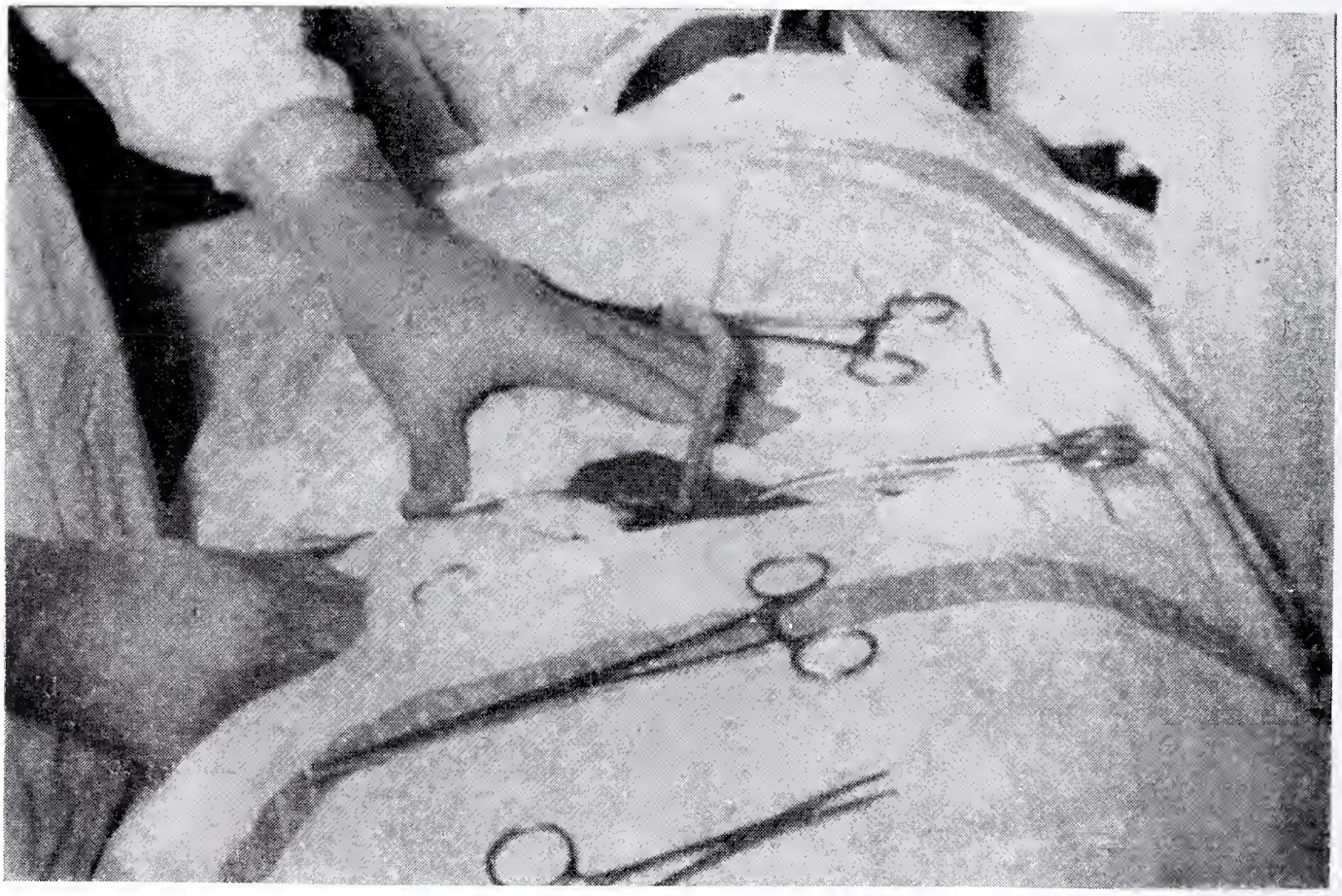


Figure 2.
Appendectomy being performed, using open pelvioscopy technique (1942).

Laparoscopy has a significant role in management of numerous gynecologic problems. Both open and closed techniques allow the gynecologist to make diagnostic evaluations of the abdomen and pelvis and perform procedures without the pain, complications, and expense of laparotomy. A recent development is the use of the YAG laser, in conjunction with hysteroscopy, to obliterate the endometrium and thereby obviate hysterectomy.[15] Also the laser has been used recently in conjunction with the laparoscope to fulgurate the endometrial implants along the uterosacral ligaments as well as other pelvic areas. We predict that in the future there will be a method of sterilization by fulguration of the tubes by special operative needle guided by ultrasound.

INDICATIONS

Indications for laparoscopy are varied: tubal sterilization, diagnosis of acute pelvic pain, evaluation of infertility, chronic pelvic pain, management of various complications, assessment of endocrinologic problems, and oncologic evaluation. The most frequent use of laparoscopy at the present time is probably for sterilization, which can be performed as an outpatient at reasonable cost. Acute pelvic pain may be diagnosed with laparoscopy, particularly in emergency situations to differentiate between ectopic pregnancy and ruptured hemorrhagic corpus luteum, as well as identifying other causes such as acute adnexal torsion, pelvic inflammatory disease, endometriosis, and, often, appendicitis. Patients with infertility and chronic pelvic pain may be evaluated for problems such as endometriosis, tubal patency, and pelvic adhesions, which frequently can be treated by laser and/or sharp and blunt dissection.

Management of a variety of problems is facilitated by introduction of the laparoscope to view the pelvic structures, particularly after inadvertent uterine perforation during D&C or suction curettage, and to complete the procedures. Laparoscopy is useful for retrieval of foreign objects such as a lost IUD, surgical sponges, and surgical drains, as well as identifying postoperative bleeding from gynecologic or surgical procedures, including liver biopsy, vaginal hysterectomy, and abdominal hysterectomy. The technique may obviate the need for surgery in assessing gynecologic endocrinologic problems such as polycystic ovary disease, genetic disorders, and ambiguous internal genitalia. The gynecologic oncologist may also more easily evaluate a patient with an unidentified adnexal mass or possibly recurring ovarian cancer prior to further surgery.[16] Combined with sound principles of diagnosis and surgical management, laparoscopy offers many advantages over major surgery without subjecting the patient to pain, morbidity, higher cost, and longer recovery.[17]

CONTRAINDICATIONS

Absolute contraindications include generalized pelvic or abdominal peritonitis, massive hemoperitoneum, abdominal carcinomatoses, abdominal ascites, and extensive previous bowel surgery. Relative contraindications include severe cardiovascular or respiratory diseases, incarcerated umbilical hernia, and extensive pelvic peritonitis; caution should be exhibited with the patient with previous radiation to the pelvis and abdomen or previous abdominal surgery, as well as with a patient with abnormal body size, whether very thin or obese.[17]

As in any other surgical maneuver, sound judgment is necessary to weigh the benefits of laparoscopy against its potential risks.

COMPLICATIONS

A 3-4 percent complication rate has been reported.[18] The technique of open laparoscopy can reduce many of these in selected patients.[19] During laparoscopy, extreme care must be taken to prevent penetrating injuries with the Verres needle or trocar (1.4 to 5.4 per thousand cases), with risk of puncturing the great vessels of the abdomen and pelvis as well as inflicting hollow viscus injuries to the bowel, bladder, ureters, and other vessels. The introduction of carbon dioxide may lead to development of subcutaneous, subfascial, or omental emphysema or even gas emboli secondary to IV injection. Anesthesia in some cases could lead to cardiac arrhythmias with severe bradycardia secondary to increased abdominal pressure. Inadvertent cautery error may cause thermal injuries to adjacent tissues, while instrument failure itself may contribute to thermal injury, lost parts, or inability to complete the procedure due to faulty bulbs or leaks.

Possible post-laparoscopy complications include delayed bleeding, delayed thermal injury, sepsis arising from preexisting conditions, failure of sterilization resulting in intrauterine or extrauterine pregnancy, persistent postoperative pain, urinary tract injuries, and bowel penetration.[20] Obviously, risk of morbidity and mortality is higher in the hands of inadequately trained per-

sonnel, thereby emphasizing the importance of good training and graduated experience in minimizing complications.[17]

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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See **Answer on Page 424**)

HISTORY: R. S. was a 79-year-old man who presented to the hospital because of crushing substernal chest pain of two hours duration. On physical examination, he was hypotensive, had crackles in both lung bases, and had both an S_3 gallop and a grade 2/6 holosystolic murmur. He had pulmonary edema on chest x-ray. While this ECG was being done, he lost his blood pressure and became pulseless. What do you think of this trace?



John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

Triplane Fracture of the Distal Tibial Epiphysis

Philip H. Johnson, M.D.*

An unusual but very characteristic fracture occurs in adolescents at the distal tibial epiphysis. Initial x-rays may suggest only minimal displacement. The fracture, however, occurs through the epiphysis and into the ankle joint making anatomic reduction necessary. If not recognized and adequately reduced serious sequelae may result.

CASE REPORT

A sixteen-year-old white male was seen in the emergency room having sustained an injury to the left ankle while riding his bicycle. Apparently his left foot was caught by the pedal and forced backward. On physical examination he had an externally rotated, plantar flexed posture to the foot. Initial x-rays are seen in Figure 1. The fracture line was seen to extend, sagittally through the mid-portion of the epiphysis, then tranversely across the epiphysis laterally, and finally upward in the coronal plane carrying with it a metaphyseal spike of bone. The patient was taken the same evening to the operating room where under general anesthesia, closed manipulative reduction was carried out. With traction, forward displacement, and internal rotation of the foot, a definite clunk was heard and felt. Reduction was maintained by a long leg cast. Post-reduction x-rays showed anatomic reduction with no more than one millimeter separation (Figure 2). Cast immobilization was continued for six weeks. The ankle three months following injury is illustrated in Figure 3. Healing in anatomic position has occurred with no fracture lucency. The final result was excellent with no pain, no swelling, and a normal range of motion.

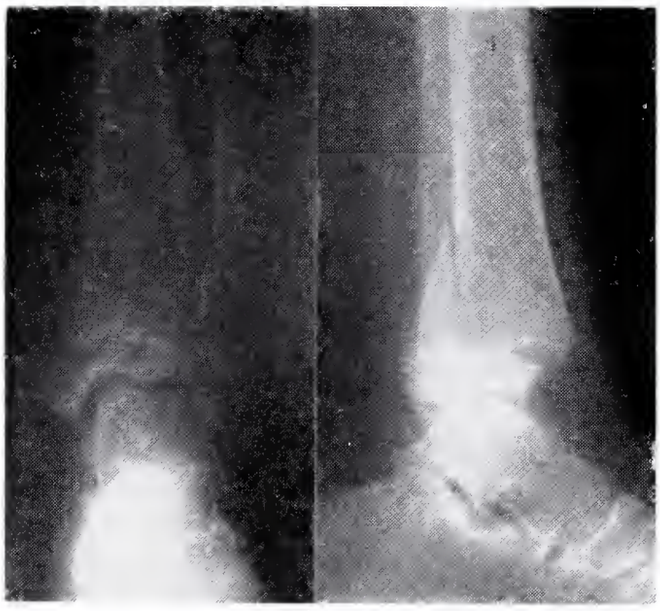


Figure 1.

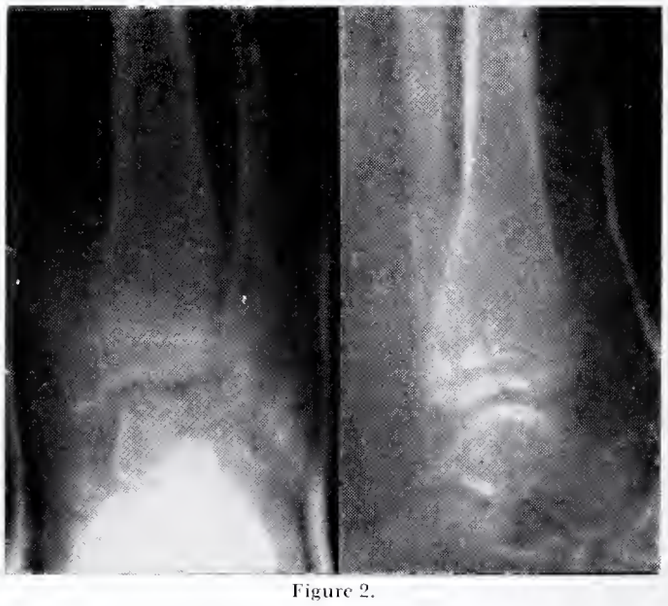


Figure 2.

DISCUSSION

The Salter-Harris classification[6] of epiphyseal fractures is helpful in prognosis and treatment (Figure 4). Type I separations occur in the

*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

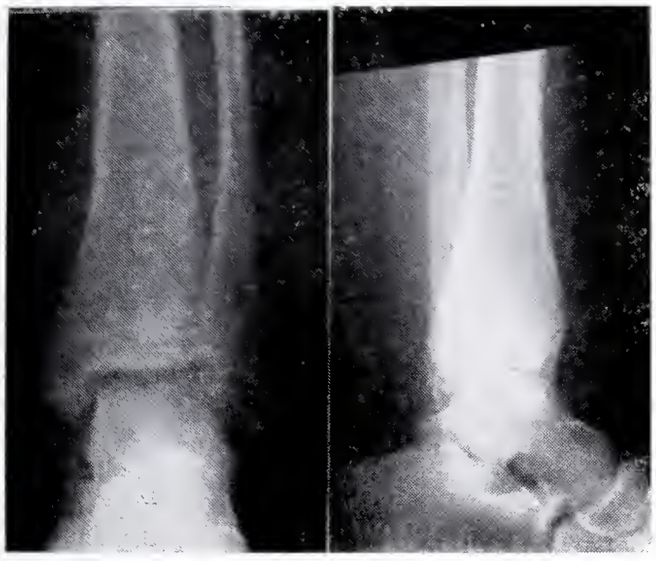


Figure 3.

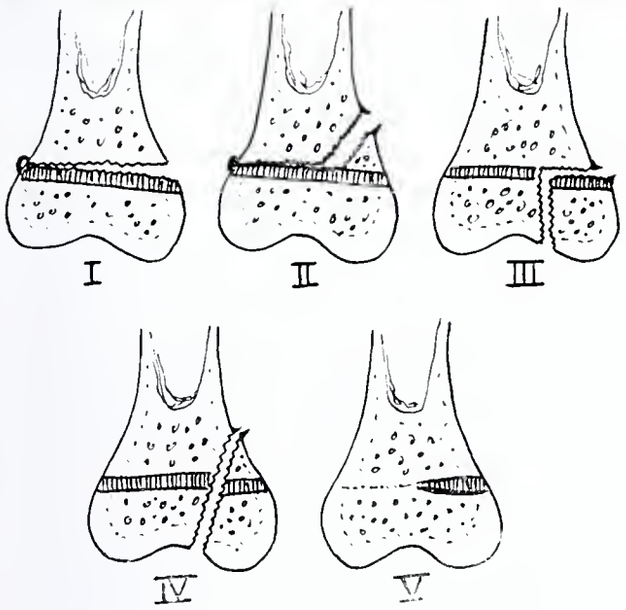


Figure 4.

epiphyseal plate. Type II separations carry with it a metaphyseal spike. These fractures usually heal without growth disturbance. Type III injuries, however, involve a portion of the epiphysis while Type IV injuries traverse the epiphyseal plate from the joint to the metaphysis. The latter two injuries frequently result in growth arrest or angulation if they are not accurately reduced. Type V injuries are produced by compression of the epiphyseal plate and may cause similar growth disturbances.

The triplane fracture of the distal tibial epiphysis is a combination of Salter Type II and Type III. It was first described by Marmor in 1970.[5] He referred to it as "an Unusual Fracture of the Tibial Epiphysis". A case report illustrating this injury was presented which required operative reduction and internal fixation. Lynn,[4] in 1972, was first to coin the term "triplane fracture" and reported two cases, both of which required surgical reduction. Torg[7] reported another case in 1975 also requiring surgical reduction.

Cooperman, et al.[1] in 1978 was first to accurately describe the specific character of the epiphyseal lesion. Conceptualization of the exact pathology was apparently a problem for the first authors. As can be seen from the illustration in Figure 5,

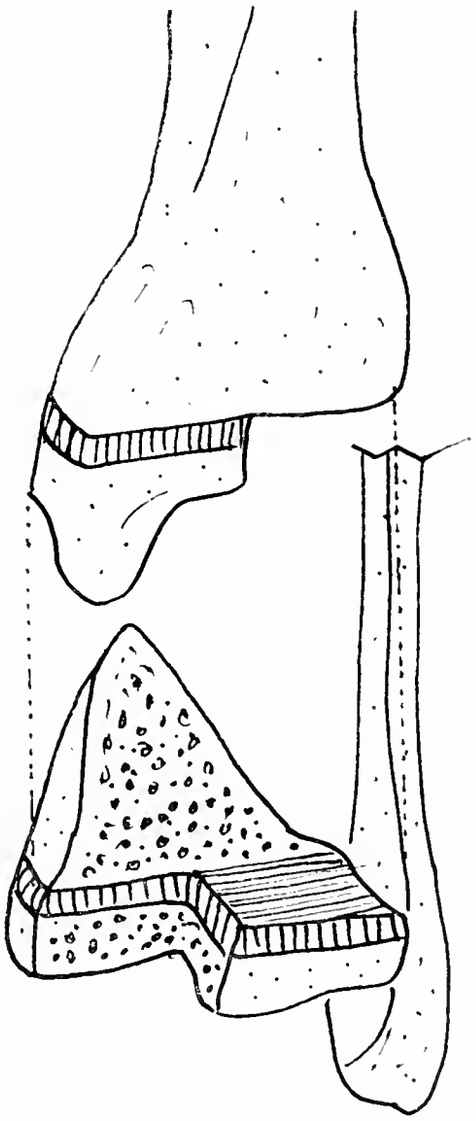


Figure 5.

the displaced epiphyseal fragment involves the lateral half of the epiphysis carrying with it a spike of the tibial metaphysis. This epiphyseal fragment is intimately attached to the fibula by the anterior and posterior talo-fibular ligaments. The medial malleolus portion of the epiphysis stays securely attached to the main portion of the tibia. As can be seen, there is a sagittal, a transverse, and a coronal plane to this fracture. Cooperman presented fifteen cases, thirteen of which

were adequately treated with closed reduction and cast. Only two required open reduction. Tomograms were used to evaluate five of his cases. Each one showed the same lesion as depicted in Figure 5.

Diaz and Giegerich,[2] in 1983, reported seventeen fractures of the distal tibial epiphysis in adolescents. Nine of these were juvenile Tillaux fractures where a small anterior fragment of the lateral epiphysis was avulsed by the anterior talofibular ligament. Eight cases of triplane fracture were reported. Six of these were described as three-part fractures. The first fragment was the previously described lateral epiphyseal fragment including the metaphyseal spike. The second fragment was the medial malleolus, fractured from the tibia. The third fragment constituted the tibial shaft minus the metaphyseal spike. Half of these patients were treated closed and half required open reduction. Only two cases of two-part triplane fractures (as described here) were encountered. Both of these were treated adequately with closed reduction and six weeks of plaster immobilization. Where there is doubt about the exact nature of the fracture, laminograms or computerized tomography was suggested.

PATHOPHYSIOLOGY

The characteristic triplane fracture is produced by forced external rotation of a plantar flexed foot. Kleiger and Mankin[3] report that the distal tibial physis closes in an asymmetric fashion. The medial and central portions close up to eighteen months prior to final cessation of tibial growth. Close examination of Figure 1 suggests that the medial epiphysis has closed and the lateral portion of the distal tibial epiphysis is still open. An external rotation force produces a tearing away of the lateral epiphysis from the medial and in plantar flexion carries with it a tibial spike. In a younger child with completely open epiphysis this would result in a Salter Type II injury. In an older adolescent, following epiphyseal closure, it would result in a typical bimalleolar fracture.

As external rotational forces occur and the lateral epiphysis is avulsed, further force produces fracture of the fibula above the distal tibiofibular syndesmosis. Cooperman reports that coexistent fracture of the fibula frequently requires open reduction before the triplane tibial fracture can be stabilized.

TREATMENT

Closed reduction and casting is usually sufficient as in the case described. Cooperman has pointed out the importance of accurate reduction to prevent external rotation deformity and articular incongruity. Because these fractures occur near skeletal maturity, premature growth arrest and angular deformity is not a problem. All authors who have preformed open reductions have noted that internal rotation closes and reduces the fracture. It is for this reason that plaster immobilization with the foot and ankle in internal rotation is recommended.

Open reduction may be necessary where marked displacement, or fracture of the fibula is present. Also, with a rare three part triplane fracture, open reduction may be required.

CONCLUSION

Triplane fracture epiphyseal separation of the distal tibia is an injury which occurs within eighteen months of skeletal maturity. Initially, x-rays may not appear significantly replaced, however accurate anatomic reduction is necessary to prevent external rotation deformity and joint incongruity. Closed reduction under general anesthesia and a long leg cast for six weeks usually produces excellent results.

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Adolescent Pregnancy

Deborah M. Bryant, M.D., F.A.A.P.*

The mass media, as witnessed by a recent weekly news magazine cover story, has discovered adolescent pregnancy.[1] It is obviously not a new problem. The recent attention it has received results from our increased recognition of its economic implications. Shrinking health and social service dollars mandate a closer look at this problem and potential remedies.

In point of fact, the number of births to women less than 20 years of age is declining, secondary to a lower birth rate per 1,000 women. Declining numbers of women in this age cohort over the next few years should also help reduce the number of infants born to teenagers.[2]

Unfortunately, the number of infants born to unmarried teens is increasing.[3] The unmarried pregnant teen is caught in a double trap; she is more likely to deliver, prematurely, a low birth weight infant and less likely to be capable of supporting that infant.

There were 34,789 live births in Arkansas in 1984. One hundred sixty-seven babies were born to mothers less than 15 years of age, and 6,754 to mothers ages 15 to 19. Combined, that is 19.9% or *1 in 5* deliveries to teen mothers. Approximately 1 in 10 deliveries, a total of 3,288, were to unmarried teens.

Data obtained in the 1980 National Natality and Fetal Mortality Survey demonstrated an association of lower birth weight and 1 minute Apgar scores for babies born out-of-wedlock.[4] Twenty-five percent of all mothers less than 15-years-old and 14% of those aged 15 to 19 had 4 or fewer prenatal visits; in other words, they had virtually no prenatal care.[5] Unmarried teens tend to receive care even later than married teens.[6] Early prenatal care has been shown to reduce some of the risks associated with teen pregnancy.[7] The trend to higher rates of out-of-wedlock births will tend to increase the number of low birth weight infants and infants with poorer neurological outcomes secondary to perinatal depression.

Mothers less than 15-years-old are twice as likely to deliver an infant less than 2,500 grams and three times as likely to deliver one less than 1,500 grams compared to the average mother.[8] Applying the national rates to the 1984 state figures, one would expect to see Arkansas teens delivering each year over 600 infants weighing less than 2,500 grams with 100 of these being less than 1,500 grams. The cost for caring for these small babies is often shifted to the public sector.

Helping teens delay their childbearing years will not make the low birth weight figures go to zero. It will, however, allow girls to reach an age at which they are emotionally and economically better prepared to care for an infant.

Education in homes, schools, and churches has been hampered by the fear that in talking about sexuality and contraception to our children, we are signalling tacit approval of their sexual activity. In fact, as consumers, movie goers, and television viewers, we already acquiesce in the encouragement of early sexual encounters. Children are bombarded with sexual innuendo and more graphic depictions of intercourse in the advertising and entertainment media. It is impossible for an average American child to be uninformed on this topic—misinformed, yes, but not uninformed.

We need to give our children correct information about

1. the fact that pregnancy can occur
 — the first time.
 — to young teens.
2. how it occurs, including information on ovulatory cycles.

*Arkansas Department of Health, 4815 W. Markham, Little Rock, Arkansas 72205.

3. how to diagnose pregnancy.
4. the consequences of teen pregnancy, including
 — the health effects on mothers.
 — the risk of premature infants.
 — the economic responsibilities of raising a child.
5. how to prevent pregnancy.

The controversy over the proper forum for sex education in home versus school is academic and too late. Our children are already sexually active. A survey in 1982 revealed that 47% of females age 15 to 19 were sexually active. This ranged from 19% of 15-year-olds to 71% of 19-year-olds.[9] These children need information on sexuality and pregnancy now.

School health education is the way to reach large groups of children, with accurate information appropriate to the students' level of cognitive and emotional development. The Arkansas Department of Education has recently developed a content guide for health education classes in all state accredited schools, grades K-12. It is a comprehensive program to teach nutrition, safety, first aid, substance use and abuse, and disease prevention, as well as family life skills and reproductive biology. Issues covered include family dynamics, the effect of a new infant on a family, gender roles, the reproductive cycle, the role of peer pressure in dating, and sexually transmitted disease.[10]

A major thrust of the curriculum will be to teach children to recognize the pressure brought to bear on them from friends, family, advertising, and the entertainment media when they make decisions regarding sexual involvement. Educating our children in their right to "say no" is a crucial step in preparing them to face that pressure.

The Arkansas Department of Health, Division of Health Education and Promotion, has developed a series of classes entitled "Postponing Sexual Involvement," for use in junior and senior high schools. Students examine problems of social and peer pressures with special attention to methods of problem solving.

Data on the efficacy of sex education in postponing time to first sexual contact and in preventing pregnancy are scarce. It is encouraging to note that contrary to the fears of some opponents of school based sex education, sexual activity does not increase following exposure to such a program.[11] At the 1985 American Public Health Association meetings, data from a school-and clinic-based pregnancy prevention program in a Baltimore inner city junior and senior high school were presented. They demonstrated that in a group of 106 teenage girls exposed to the program over a three year period, the age of first sexual contact was postponed by seven months compared to controls.[12]

There are obvious needs to be met in the early recognition of teen pregnancy, in the provision and promotion of early prenatal care, and in intensified efforts to prevent subsequent pregnancies. We should, however, not give up our efforts to prevent the first pregnancy of a young teen. Early education which includes accurate information on the reproductive cycle, consequences of pregnancy, and methods of prevention is a cornerstone of such an effort.

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Pediatric Update

Newer Concepts in the Repair of Pediatric Cranial Defects

William M. Chadduck, M.D.,* Steven L. Cathey, M.D.,** and Dana A. Martin***

Cranial trauma and skull defects caused by tumors and infection provide a need for a wide variety of cranial reconstructive procedures. Newer conceptual and technical aspects of treatment of children with these problems are presented.

DEPRESSED SKULL FRACTURES

Patients having depressed skull fractures are always considered for neurosurgical treatment. If the injury is a closed injury, and the depression of the cranial bone is minimal, operative intervention is frequently not indicated. However, if the bone is depressed more than five millimeters, or is near a venous sinus, then elevation of the depressed fracture should be considered. If the wound is an open one with depression of any degree, then neurosurgical exploration of the wound is mandatory to repair dural lacerations and debride cerebral tissue. In order to avoid pushing bone fragments deeper, the standard procedure has been to place a second opening near the area of the depressed fracture (Figure 1).



Figure 1.
CT scan shows a typical depressed bone fragment clarifying the need for a large cranial opening to remove it.

*Department of Neurosurgery, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72205.
**Resident, Department of Neurosurgery, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72205.
***Third year medical student, Department of Neurosurgery, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, Arkansas 72205.

Then working in a circumferential manner, bone including the surrounding fractured pieces is removed. Free fragments of bone have usually been discarded, but occasionally large bone fragments might be wired back into place. In most instances, it has been accepted that after suitable healing of the wound the patient would return for a second operation to repair the cranial defect. Occasionally, patients will form new bone in the process of healing and obviate the need for a secondary procedure. Lately, modifications of the technique have been accomplished for these open wounds. Using power assisted tools, small grooves around the site of the depressed fracture can be made so that all of the fragments can be removed with virtually no net loss of cranial bone. The pieces, rather than being discarded, are scrubbed with a brush and soaked in an antibiotic solution. They are then replaced like pieces of a puzzle, and sutured onto the underlying dura with absorbable suture material. (Figure 2) Vigorous local cleansing of the wound is required, and antibiotic coverage is relied upon in as much as the original wound was an open or dirty wound. Using this



Figure 2A.
(A) A lateral view of skull radiograph shows the typical appearance of a comminuted depressed fracture.

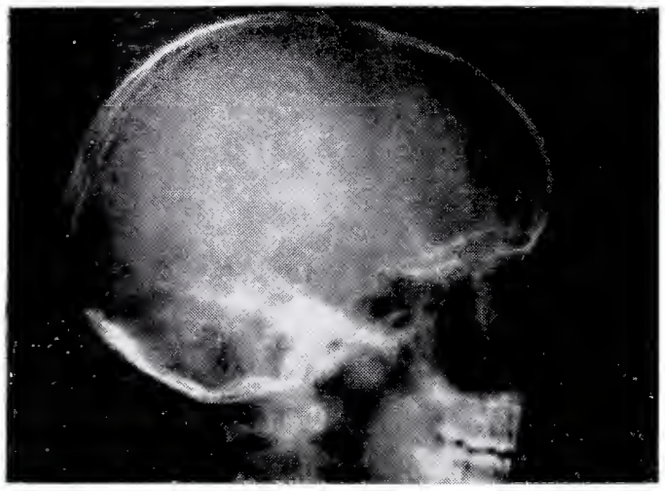


Figure 2B.
(B) Postoperative radiograph shows the bone fragments replaced into defect.

technique, most wounds in children will heal by primary intention and the bone fragments will heal solidly to close the cranial defect. It is unusual for a second operation or cranioplasty to be required. There may be an increased risk of infection in replacing the bone fragments, and families must be made aware that should an infection occur, the bone fragments may need to be removed.

Using this approach, gratifying results have been obtained. Table 1 shows the procedures and outcomes of fifteen consecutive patients surgically treated for depressed skull fractures at the Arkansas Children's Hospital. All six patients selected for primary fragment replacement healed solidly and none developed infections. Eight of the nine having standard debridement only, required additional surgery or have residual defects. The remaining patient was lost to follow-up.

CRANIAL DEFECTS

For one reason or another, many children require cranioplasty for cranial defects. Removal of tumors of the skull or infections such as osteomyelitis, usually result in cranial defects. Surgical procedures, involving infected depressed skull fractures or those near the paranasal sinuses, usually result in residual calvarial defects. Many substances have been used to repair cranial defects, including tantalum, wire mesh, and acrylic.[1] Certainly in adults, one of the most efficacious forms of cranioplasty employs use of methyl methacrylate, which can be form fitted to the defect. In children however, the incomplete development of the skull may result in displacement of the acrylic producing an unsatisfactory bump or bulge at the site of the surgical procedure. Late infections associated with the foreign material also occur. For these reasons, autogenous bone, usually rib, or iliac wing, has been used for closure of defects in children. Autogenous bone generally offers a good result from the standpoint of closing the defect and producing an excellent protective covering. Rib grafts do, however, often leave a corrugated appearance at the site of the repair. If the cranial defect is covered by hair, the cosmetic outcome is not so important; however, in defects involving the frontal bone, the cosmetic result is of sufficient importance to justify other methods for cranioplasty.

The technique preferred involves harvesting the outer table of the parietal bone for rotation of a free bone flap into a frontal defect. The procedure is done using power instruments, so

TABLE 1

Patient	Operation	Outcome
84 31 99	Debridement only	Persistent defect (Occipital)
70 21 41	Debridement only (Frontal)	Sinus infection, subsequent cranioplasty (rib graft)
76 07 72	Debridement only	Persistent defect
81 92 80	Debridement only	Persistent defect
83 25 85	Debridement only	Cranioplasty done (Acrylic)
81 17 19	Debridement only (Frontal)	Persistent defect
80 78 17	Debridement only	No follow up
83 33 97	Debridement only (Frontal)	Cranioplasty (split calvarial)
84 49 47	Debridement only (GSW)	Defect persists
83 25 88	Fragments replaced	Healed
82 31 27	Fragments replaced	Healed
80 62 14	Fragments replaced (Closed Fracture)	Healed
80 00 97	Fragments replaced	Healed
79 61 15	Fragments replaced	Healed
85 15 84	Fragments replaced	Healed

that the cranial defect can be outlined on an intact parietal bone and the graft elevated after cutting only through the outer table. The donor site heals well forming new cortical bone. The calvarial graft can then be further fashioned with power instruments to exactly fit the contour and shape of the frontal defect. This technique offers very little increase in morbidity to the operative procedure and affords an excellent cosmetic result without the long-term risks of displacement or infection which occur with foreign materials. Also, considerable postoperative pain associated with the harvesting of either rib or iliac grafts is avoided.

Figure 3 demonstrates the ideal candidate for calvarial bone graft cranioplasty. The patient's

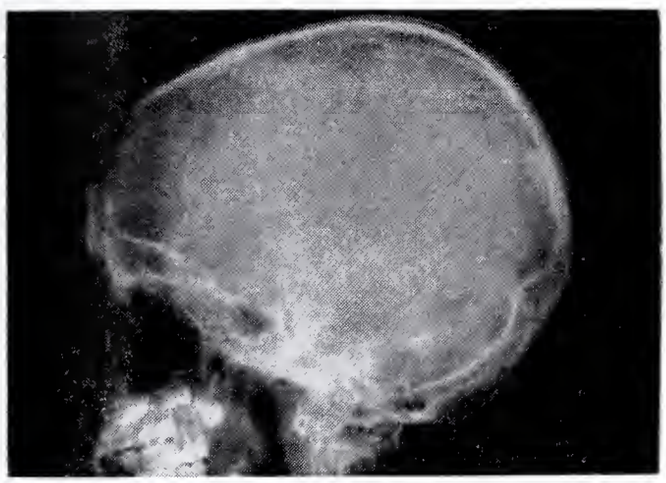


Figure 3.

Lateral skull x-ray shows a post traumatic cranial defect in the frontal region. The defect is below the hairline in the forehead and near the position of the as yet undeveloped frontal sinus. This patient had a calvarial bone cranioplasty.

defect was low in the forehead and associated with pulsations of the underlying dura. The frontal sinuses were not fully developed and the frontal contour will change with further growth and development. Acrylic implants may be displaced by the growth process, and the proximity of the defect to the developing frontal sinus, or acne associated infections, could lead to the need for removal of the acrylic. The perfect contour of the calvarial bone makes it superior to rib grafting.

According to Gurdjian,[2] Mueller first used outer table calvarial bone grafts as early as 1890. Trephined bone buttons were split providing donor bone for repairing defects elsewhere in the skull. Kyoshima and associates,[3] have utilized inner table bone flaps for primary calvarial repairs in cases of invasive skull tumors. Split calvarial grafts have also been reported for secondary cranioplasty by Psillakis.

Viable calvarial bone grafts can be rotated with blood supply intact, via scalp and pericranial attachments. The vascularized bones are preferable in closing defects from encephaloceles or near the frontal sinus.

The goal in dealing with most traumatic skull defects has been to attempt primary closure using fragment replacement when possible, vigorous cleansing of wounds and the use of antibiotic coverage. This usually obviates the need for secondary operations. When delayed cranioplasty is required, an autogenous graft, specifically split calvarial bone is preferred when the defect is cosmetically significant. Satisfactory results thus far, have justified the use of the techniques described.

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Surgical Overview:

Small Bowel Tumors

Johnny E. Brian, Jr., M.D.,* and J. Michael Stair, M.D.**

ABSTRACT

Small bowel tumors, although rare, occur with enough frequency to warrant clinical awareness. Presented is a review of such tumors. Occurrence, symptoms, diagnosis, and therapy are discussed for benign and malignant tumors of the small bowel.

INTRODUCTION

The small bowel, lying nestled between the spine and the umbilicus, is a reticent organ. Voicing few complaints, it is rarely afflicted by neoplastic disease. A vast mucosal surface is no detriment; the small bowel perserveres to maintain normalcy whilst its neighbors fail. Neoplasia does occasionally establish a foothold, but such growths are frequently benign. Only 3 to 6% of GI tumors arise in the small bowel.[1] Delayed diagnosis often results from protean symptoms and infrequent occurrence of small bowel tumors. It is our aim to foster a wider appreciation of these tumors and their associated symptomatology.

Symptoms vary with tumor type but tend to be nonspecific. Benign neoplasms often go unnoticed and one-half are incidental findings at autopsy or laparotomy.[2] Malignant tumors are more likely to become symptomatic and 75 to 80% will do so.[3] However, in most cases symptoms are present from months to years before diagnosis. Malignant tumors are diagnosed sooner, but in both groups symptoms are generally present greater than six months.[4,5] The lower incidence of symptoms in the benign group may be attributed to their slower growth in combination with the distensibility of the small bowel and its liquid contents. Small bowel tumors generally do not make their presence known until the fifth to the seventh decade. One series reports an average age of diagnosis to be 62.2 years for benign tumors and 56.8 years for malignant tumors.[6]

Pain is the most frequently encountered symptom in both malignant and benign tumors.[5] The nature of the pain is variable and dependent on the type and location of the tumor. Midback pain may indicate malignant involvement at the root of the mesentery. Obstructive symptoms frequently occur in both groups, however, the mechanism of obstruction differs. Benign tumors often act as lead points in intussusception and they are the most frequent cause of intussusception in adults.[2] Malignant tumors can cause intussusception but more often obstruct by infiltration and direct growth. Intermittent obstruction may produce pain of episodic nature. Obstructive symptoms may predominate with lesions arising in the duodenum. Because pain is often the result of obstruction, some authors do not classify them as separate symptoms. Bleeding occurs in both groups but more frequently in the benign group. Bleeding has been reported as the second most common presenting symptom in small bowel tumors and is usually due to mucosal involvement.[6,7] Benign tumors of vascular nature have a greater propensity to bleed. Hemorrhagic tendencies in malignant tumors are much more dependent on the tumor type and range from extremely common to uncommon. Leiomyosarcomas usually present with recurrent melena whereas carcinoids rarely bleed. Weight loss occurs commonly in malignant processes.[5] Other symptoms associated almost solely with malignant tumors are perforation and presence of a palpable mass.

Diagnosis of small bowel lesions can be difficult. Only a small portion of the small intestine is available for visual inspection. Endoscopy can visualize and localize lesions arising in the duodenum and terminal ileum, and biopsy techniques can establish tumor type and aid in therapy. Contrast radiography is the mainstay in diagnosis of small bowel lesions. In the past, upper GI series with follow-through was most often utilized for small bowel evaluation. Recently, small bowel enteroclysis (small bowel enema) has emerged as the study of choice. Although this technique is

*Resident, Department of Anesthesiology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.
**Pulaski Surgery Clinic, P. A., 2007 Fendley Drive, North Little Rock, Arkansas 72114.
Address reprints to: Dr. J. Michael Stair, 2007 Fendley Drive, North Little Rock, Arkansas 72114.

somewhat time consuming and may cause discomfort for the patient, it allows much more detailed inspection of the small bowel. Lesions which are missed on small bowel follow-through may be detected on enteroclysis.[8] One series reports enteroclysis to be over 90% accurate with 2% false positives and 1% false negatives.[9]

The paucity of tumors arising in the small bowel has led to investigation for protective mechanisms. Although most tumors arise de novo, some seem to have clearly defined causes such as Peutz-Jeghers syndrome (Mendelian dominant) or congenital ectopic pancreatic adenomas of the duodenum. Numerous theories regarding tumor resistance of the small bowel have been advanced although none have been proven. Various theories postulated include possible detoxification of carcinogenic substances by high levels of benzopyrene hydroxylase in the small bowel.[10] IgA occurs in higher concentration in the small bowel mucosa and this could aid in destruction of potentially carcinogenic viruses.[11] Liquid contents may reduce mucosal irritation.[12] The mucosal cells of the small bowel regenerate at a rapid rate and may inhibit clones of neoplastic cells. Bacterial counts are much lower in the small bowel, and transport time is much more rapid than the colon.[11,13] It is unknown which, if any, of these theories play a role in protection of the small intestine from neoplasia.

BENIGN TUMORS

Benign neoplastic processes can be broken down into several groups, based on tissue of origin. Euch tumors can arise from epithelium, connective tissue, neurogenic tissue or vascular tissue. Epithelial derived tumors can be further subdivided into adenomatous polyps, villous adenomas, Brunner's gland adenomas, and hamartomas. Adenomatous polyps are the most frequently occurring of these. They are distinguished from villous adenomas by their microscopic picture of tubular or tubulovillous growth. Although they are the most common benign tumor of the duodenum, they occur more frequently in the ileum.[14] Adenomatous polyps may occur as solitary growths or they may be multiple, involving segments of the small bowel or at times the entire bowel. Obstruction and bleeding are the two most commonly encountered symptoms, as with most small bowel tumors. Malignant potential of these tumors is unknown.

Villous adenomas are much rarer tumors occurring most frequently in the duodenum with decreasing frequency in the jejunum and ileum.[15] Although these tumors are most common in the duodenum, they compromise only about 1% of duodenal tumors.[16] Bleeding is the most frequently reported symptom, usually as melena or hematemesis.[16] Obstructive symptoms are also prominent and patients will often complain of early satiety, eructation and unexplained vomiting. Symptoms are usually present for months prior to diagnosis, with one review reporting eleven months as an average.[17] Villous adenomas of the duodenum have a definite malignant potential, ranging from 35 to 58%.[15,17] This factor warrants aggressive treatment. If malignant degeneration has not occurred, mucosal excision or sleeve resection is adequate. Malignant change mandates wide excision and node removal, i.e., pancreatoduodenectomy.

Another epithelial tumor is Brunner's gland adenoma, a very rare lesion of the duodenum. Brunner's glands, located in the duodenum, produce alkaline secretions important in protection from acid chyme. Symptoms of these adenomas are similar to other duodenal lesions. Hamartomas are composed of a central stalk of smooth muscle with a variety of epithelial elements. The smooth muscle serves to distinguish these polyps from other types. Most frequently encountered in the Peutz-Jeghers syndrome, these lesions are multiple in the small bowel but can involve the entire alimentary tract. Symptoms are similar to other small bowel tumors, with obstruction and bleeding predominating. Malignant change is rare in hamartomas.

Leiomyomas and lipomas compose the benign small bowel tumors arising from connective tissue. Leiomyomas, originating from smooth muscle, are less common in the small bowel than in the stomach. Arising from the muscularis propria or rarely the muscularis mucosa, they exhibit a variety of growth patterns. Extraluminal, intraluminal, a combination of these two (dumbell), and intramural growth occur in leiomyomas. The age at diagnosis is somewhat earlier, with one series reporting the fifth decade as the peak in incidence.[14] Histologic differentiation of leiomyomas from leiomyosarcomas is not easy; therefore, surgical specimens should have adequate margins.

Lipomas of the GI tract are most frequently encountered in the ileum.[14] Most common in the sixth and seventh decade, more than half are

asymptomatic. Symptoms can arise from obstruction or intussusception, with bleeding being less frequent.

Tumors of neurogenic origin occur rarely in the GI tract. Neurilemmomas and neurofibromas both arise from nerve sheath elements. Neurilemmomas (schwannoma) are similar to leiomyomas in morphology, symptomatology and radiographic findings. Neurofibromas, arising from fibroblastic elements, may be single but usually occur as multiple neoplasms. These tumors are usually asymptomatic but can cause bleeding or obstruction. Gastrointestinal neurofibromas can be associated with Von Rechlinghausen's disease. Ganglioneuromas are a third class of neurogenic tumors. Originating from the sympathetic nervous system, it is the most common neural tumor in the gut. Ganglioneuromas are vascular; bleeding is the most frequent symptom. Their vascularity allows angiography to be useful in diagnosis. Malignant forms of all neurogenic tumor types have been reported.

Vascular tumors arise at all levels of the GI tract. Originating from blood or lymphatic vessels, these tumors represent developmental abnormalities rather than true neoplastic processes. Usually multiple, hemangiomas can occur in a inherited form, Osler-Weber-Rendu disease. Hemangiomas tend to bleed and two-thirds will do so. Lymphangiomas occur less frequently than hemangiomas and they are usually solitary lesions. Rarely producing symptoms, lymphangiomas are usually incidental findings.

MALIGNANT TUMORS

Adenocarcinoma is the most frequently occurring malignant tumor in the small bowel, composing 40 to 50% of such tumors.[18] Some have reported a male predominance but others have not found this.[19] The duodenum most frequently falls victim to adenocarcinoma, with the jejunum close behind. Patients present at a later age, usually in the sixth through the eighth decade.[20] Symptoms are as previously discussed, with pain, obstruction and bleeding being prominent. Tumors in the duodenum can also obstruct the bile duct, leading to jaundice. Pain associated with these tumors is often epigastric. Occult blood loss, in combination with epigastric pain often leads to a misdiagnosis of peptic ulcer. Tumors distal in the small bowel have less specific symptoms.

Treatment consists of total removal of the tumor and regional lymph nodes. However, this is often limited by several factors. Adenocarcinoma is often in an advanced state when discovered and local spread may prevent total excision. The proximity of regional lymph nodes to small bowel blood supply can also prevent total removal. Pancreatoduodenectomy, preferred with duodenal tumors, is limited by the patient's age and general physical status. Five year survival following a Whipple procedure ranges from a few percent to almost 50%, depending on the series. Overall five year survival is reported to be from 5 to 25%.[21,22] In general, the outlook for these patients is poor.

CARCINOID

Unique in several ways, carcinoid tumors represent a significant proportion of small bowel malignancies. Derived from Kulchitsky cells, these tumors can secrete biologically active amines. Recently the concept of the APUD system has shed new light on the origin of these tumors. Not restricted to the GI tract, these tumors can arise in other locations, such as the thymus, larynx, ovary, cervix, lungs, and bronchi.

Carcinoids form a sizable part of small bowel tumors and account for 74% of malignant tumors.[23] Extra-appendiceal lesions usually occur in the fifth decade. One half of carcinoids occur in the appendix, making it the most frequently affected organ.[24] Appendiceal lesions present earlier, with the third and fourth decade being most common. One quarter of carcinoids occur in the small intestine, most commonly in the ileum. Tumors arising from midgut tissue are most likely to metastasize and produce the carcinoid syndrome.

Carcinoids originate in the submucosa and grow very slowly. Their mitotic index is low; however, this is not an indicator of benign nature as usual cytologic criteria of malignancy cannot be applied to carcinoids. All carcinoids should be considered malignant, although only around one-third will metastasize. Following serosal involvement they first metastasize to regional lymph nodes and then to liver or lungs. The incidence of metastasis can be predicted by the size of the primary. With tumors less than 1 cm. only 2% have metastasis and with tumors greater than 2 cm. 90% will have metastasis.[23] Multicentricity is also common in GI carcinoids, occurring in 20 to 30%.[25]

In spite of ability to produce the carcinoid syndrome, most carcinoids remain asymptomatic. Only 20 to 30% produce symptoms.[25] Tumors which are symptomatic tend to be more aggressive with a higher incidence of metastasis. Even with symptoms, it is rare for a correct preoperative diagnosis to be made. One author reports that only one of 56 symptomatic carcinoids was correctly diagnosed preoperatively.[23] Symptoms are usually nonspecific, as with other small bowel tumors. Intermittent obstruction with crampy abdominal pain and vomiting are often seen. This may be due to intussusception or may arise from a localized fibrotic reaction producing kinking of the bowel. This reaction can cause matting of the bowel and a palpable mass in the right lower quadrant.

Therapy, as with other tumors, is aimed at complete removal. This involves segmental resection of bowel with removal of adjacent node bearing mesentery. Frequently, however, total tumor removal is not possible. In such cases it has been shown that debulking the tumor increases survival and reduces symptoms. Tumor metastasis in the liver usually produce the active amines responsible for the carcinoid syndrome. Reduction of the hepatic tumor bulk and symptoms has been achieved by hepatic artery infusion of chemotherapeutic agents or hepatic artery ligation.[26] Reduction in carcinoid symptoms often greatly improves quality of life.

LEIOMYOSARCOMA

The most common malignant connective tissue tumor of the small intestine, leiomyosarcoma is derived from intestinal smooth muscle. Most common in the jejunum, these tumors predominate in the fifth and sixth decades. The most frequent presenting complaint is recurrent melena hemorrhage can occur, however. Leiomyosarcomas tend to grow toward the serosal surface of the tend to grow toward the serosal surface of the bowel, making obstruction a rarity. Abdominal discomfort and a palpable mass may be noted. The mass is usually large and mobile. These tumors are subject to vascular insufficiency and fever may result from necrosis and infection.

Operative removal is aimed at the tumor mass and any direct spread. Lymphatic dissemination is rare and lymph nodes are not usually resected. If complete removal is not possible, palliative resection with postoperative chemotherapy should be attempted. Leiomyosarcomas grow slowly and a five year survival of 48% has been reported.[21]

MALIGNANT LYMPHOMA

Rarely occurring in the GI tract, lymphomas represent 1% of intestinal neoplasms.[27] More common in the stomach, approximately one-third occur in the small bowel.[28] Most intestinal lymphomas probably do not represent a primary process but are part of a systemic lymphoma. Malignant lymphomas are generally classified on the basis of histologic appearance. However, recent advances in the understanding of the immune system may replace current classification systems.

Lymphomas occur in a bimodal distribution, with peaks in the first and sixth decade.[28] It is the most common GI tumor in children, especially between the years of 3 to 8. As with systemic lymphomas, anorexia and weight loss can be prominent presenting complaints. An abdominal mass may also be noted. Chronic incomplete obstruction can occur from intussusception. Blood loss occurs from mucosal ulceration.

Frequency of occurrence is governed by the relative amount of lymphoid tissue. Most small bowel lymphomas, therefore, occur in the ileocecal region. Lymphomas tend to be large when discovered; most will be over 5 cm. Lesions may be classified as aneurysmal, ulcerative, polypoid, or annular on the basis of physical appearance.

Mediterranean abdominal lymphoma represents a variant of intestinal lymphoma. These tumors are true primary lymphomas of the GI tract. First noted among Arabs and Jews of Middle Eastern and North African origin, it is now recognized to occur sporadically throughout the world. Dysproteinemia and malabsorption are common, in contrast to other forms of lymphoma.

Treatment of small bowel lymphomas consists of wide excision of the primary lesion with en-bloc removal of lymph nodes. Postoperative radiation and/or chemotherapy is controversial following a curative resection but should be used if residual disease exists. Survival is variable and based on the tumor type and residual disease.

SUMMARY

We have presented a brief review of small intestinal neoplasms, malignant and benign. Symptom complexes and diagnostic modalities were discussed. While these tumors represent a

rare class of neoplasia, the diagnostic possibility should not be overlooked. Chronic bowel complaints are common in our society. This should not deter thorough diagnostic evaluation to rule out the possibility of neoplastic processes or other disease. We hope that this review will make clinicians more aware of these tumors.

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ANSWER—Electrocardiogram of the Month

DISCUSSION: The trace begins with twa slaw, wide beats. Fram lead II thraugh AVF, the QRS camplexes are narrow and irregular and P-waves can nat be seen with any degree af certainty. Thaugh the quality af the trace is nat aptimal, bath Q-waves and ST elevatian appear ta be present in III and AVF. In V_1, the rate picks up ta 150 per minute and the QRS bath widens and regularizes. Abruptly in V_3, the tachyarrhythmia ceases and an irregular wide QRS bradyarrhythmia ensues fram mid-V_3 thraugh V_6. One suspects that the patient has experienced inferiar infarction, that his sinus mechanism is last, that runs of atrial fibrillatian are present, and that he may be having runs of ventricular tachycardia. Asystalic periods are present with ventricular escape activity. This is a frightful ECG and seems to carrelate with the dire clinical picture partrayed. The patient was paced, was treated for the tachyarrhythmias nated, and had studies which suggested acute mitral regurgitation. Electromechanical dissaciation developed quickly and soon all was lost.



EDITORIAL

Lipoprotein Disorders

Alfred Kahn, Jr., M.D.

The New England Journal of Medicine has excellent reviews, and one of the better ones presented was by Schaefer and Levy entitled "Pathogenesis and Management of Lipoprotein Disorders" (New England Journal of Medicine, Volume 312, Page 1300, May 16, 1985). Both the lay press and the medical press have evinced great interest in lipid metabolism because of its involvement with degenerative vascular disease, which stands with cancer as the main killers of the elderly. There are many middle-aged individuals who suffer from degenerative vascular disease that could be prevented or minimized by appropriate diagnosis and therapy. Furthermore, trends in lipid abnormalities appear in childhood in many individuals. Thus, there is a spectrum of age in which lipid metabolism is an important consideration from a preventive and therapeutic point of view.

Schaefer and Levy describe the plasma lipoproteins as being "spherical particles with a surface that consists largely of phospholipids, free cholesterol and protein, and a core that contains mostly triglyceride and cholesterol ester". Some portions of the surface of these minute spheres are water-repellent and others are water-attractive.

The authors explain that, using three criteria, lipoproteins are able to be divided into four different classifications. The criteria for dividing them are as follows: density, composition and electrophoretic mobility. The classes into which the lipoproteins can be divided are: chylomicrons, very low-density lipoproteins (VLDL), low-density lipoproteins (LDL), and high-density lipoproteins (HDL). There are subdivisions in each group. The authors have a very good chart and description of the synthesis and catabolism of lipoproteins in which they show that under synthesis, the intestine and liver are the principal sites of the metabolism process. The intestine forms the chylomicron which may form either a chylomicron remnant or HDL-cholesterol, the end products of which may go to the liver or to the peripheral cells. The liver, on the other hand, forms VLDL-cholesterol which may form HDL-cholesterol or LDL-cholesterol; the latter goes to the peripheral cells. By way of an explanation, Schaefer and Levy indicate that VLDL-cholesterol synthesis is controlled by what the individual eats and by hormones—it is said to be inhibited by leftover particles of chylomicron catabolism which enter the liver. LDL-cholesterol is reported to be the major cholesterol-carrying lipoprotein. The authors relate that HDL-cholesterol is formed from chylomicrons and VLDL-cholesterol—and it is capable of taking up free cholesterol.

The article contains a good description of the clinical approach to discovering abnormalities of lipoprotein metabolism. They suggest that patients be tested for plasma cholesterol, triglycerides and HDL-cholesterol in a fasting state. A very good chart is presented indicating that it is desirable to have a low level of LDL-cholesterol and free cholesterol. Low levels of HDL-cholesterol seem to produce an increased risk of cononary disease. It is of considerable interest that Schaefer and Levy state that measurements of plasma apolipoprotein A-1 (the major HDL protein) and apolipoprotein B (the major LDL protein) are considered to be better prognostic indicators of coronary disease than HDL-cholesterol or LDL-cholesterol.

Schaefer and Levy caution physicians to be careful in diagnosing abnormal blood lipid states as being due to primary disorders of lipid metabolism—when, in actuality, some disturbed lipid chemical states are, so-to-speak, secondary. They illustrate this with hypercholesterolemia, which

might be the result of excessive cholesterol in the diet, a thyroid deficiency state, liver disease, kidney disease, etc. By the same token, most physicians are now aware that hypertriglyceridemia may be an accompaniment of diabetes mellitus, excessive alcohol use, kidney disease and so on. In this discussion, the authors also recommend that families be screened if there is a suspicion of a primary genetic disorder.

The authors categorized lipoprotein disorders as follows: hypercholesterolemia only, combined hypercholesterolemia and hypertriglyceridemia, mild hypertriglyceridemia, severe hypertriglyceridemia, hyperlipidemia, and HDL deficiency. They recommend lipoprotein phenotyping to help categorize the lipid disorder under study. They go on to say that any of the above disorders may be due to a variety of genetic disorders. Furthermore, they state that different lipoprotein types may be present in the same family.

The authors give a very good discussion of lipoprotein disorders. Type I and V hyperlipoproteinemia are discussed under the general heading of hyperchylomicronemia. In this disorder, which is associated with plasma triglycerides, often above 1000 micrograms per dekaliter, they report pancreatitis, an enlarged liver and spleen, changes in the retina, and xanthomas. There are various causes of this disorder, including lipase deficiencies, Lupus erythematosus and so on. The authors recommend treatment by markedly restricting dietary fat. Some cases of hypertriglyceridemia with increased chylomicra and VLDL levels occur in obese individuals with diabetes mellitus and gout. If this disorder is present, dietary fat should be restricted, alcohol should be avoided, and any underlying metabolic disease should be treated.

The second group of cases discussed by the authors is that of those suffering from increased Beta VLDL; this is Type III hyperlipoproteinemia. These patients are said to be at considerable risk of premature coronary disease and peripheral vascular disease—as well as xanthomatosis. For this group, they suggest reduced calorie intake, no alcohol ingestion, and the avoidance of cholesterol and fats in the diet to a maximal degree. Three medications can be considered: Nicotinic Acid, gemfibrozil and clofibrate.

Another category is that of increased VLDL or what is called Type IV hyperlipoproteinemia. This is said to be an adult disease and is often associated with overweight, diabetes mellitus and gout. It can be caused by genetic disorders or alcohol ingestion; stress, estrogens, beta-blockers and some diuretics are reported to be aggravating factors. In this category, the authors recommend restriction of calories in the diet, treatment of any endocrinopathy, limitation of carbohydrates, cholesterol and fats, and no alcohol. The same drugs are recommended for this disorder as in those where there is increased Beta VLDL.

Schaefer and Levy state that increased LDL is usually due to familial combined hyperlipidemia or familial hypercholesterolemia, but it may be secondary. For this, they recommend a low-fat, low-cholesterol diet. Depending on the phenotype, they recommend drugs; niacin and gemfibrozil are recommended in Type IV or Type II-B disorders; Type II-A cases can be treated with colestipol or cholestyramine.

The authors use a categorization called Abnormal LDL. This disorder is characterized by normal lipid levels or moderate evaluation of the blood cholesterol level. These patients are said to have betasitosterolemia or cerebrotendinous xanthomatosis. The recommended treatment here is cholestyramine and chenodeoxycholate.

Still another syndrome is that associated with deficiencies of chylomicrons, VLDLs and LDLs. The authors say that this disorder is usually the result of abetalipoproteinemia or hypobetalipoproteinemia. The disorder is associated with atypical retinitis pigmentosa and spinocerebellar ataxia.

Lastly, there may be a deficiency of HDL. This can be due to genetic disorders, sedentary life styles, overweight, smoking, etc. This deficiency is said to be commonplace, and there is an association with premature coronary disease. Some of the patients with this disorder have abnormalities of apolipoprotein A-I.

The authors have presented in this article some of the principal modes of therapy for lipoprotein disorders. Dietary treatment is highly recommended—for example, the restriction of dietary fat to less than 30 percent of the total calories is desirable. They further recommend a 1:1 ratio of polyunsaturated fats to saturated fats. Dietary cholesterol should be restricted to 300 mg. per day or less. The drugs which they discussed consist of cholestyramine, colestipol, niacin, clofibrate, gemfibrozil and probucol.

The charts in this article give a good deal of help in making a diagnosis of a lipoprotein disorder. The therapy is well-outlined in the text.

"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Leonidas Kirby, M.D.

Henry V. Kirby, M.D.*

There is scarcely a more classic example of the beloved pioneer physician than Leonidas Kirby. He was born on the line between Dade and Green counties in Missouri on December 1, 1850. His grandfather, Tulley C. Kirby, was said to have "had a natural taste for medicine often caring for the sick in his neighborhood without charges". His father, Benjamin F. Kirby, graduated from McDowell College Medical School in 1854 and practiced in Dadeville, Missouri until his untimely death in 1856. Young Leonidas lived with his stepfather, his grandfather and eventually an uncle, Dr. O. C. Bender, under whom he studied medicine while working in a drug store.[1] In 1871 he moved by wagon to Harrison, Arkansas, opening a drugstore with a saloon in the basement. In 1873 he married Rhoda Virginia Crump and built a two room log house which, with successive improvements, eventually evolved into a stately twelve room homeplace.[2]

Two dramatic events changed the young druggist's life: a choking five-year-old boy was brought to him whose life he saved with a tracheotomy and a diphtheria epidemic during which he was drawn into rendering treatment. Afterwards he felt compelled to complete his medical education. Leaving his wife and babies with $75.00, he went to St. Louis to St. Louis College of Medicine, graduating in 1876. Back in Harrison he began a sort of itenerant practice on horseback. He left home on Monday riding to the towns of Bergman, Zinc, Lead Hill, Lowery, Omaha, Burlington, Denver, Alpena, Octavia, Capps and tried to make it back home by Friday night. He ate where he was at meal time and slept where night caught him. He carried few medicines, improvising from materials at hand. In 1880, he progressed to a buggy, carrying a copper sterilizer for the care of instruments with which he performed general surgery on his rounds.[2]

In addition to his heavy medical caseload Dr. Kirby invested himself heavily in the community.



He was the second postmaster of Harrison. He helped with the organization of the First Christian Church where he taught a boy's Sunday School class. He served on the school board for over 20 years. A prominent Mason he attained the rank of 33rd Degree Mason and served as Worshipful Master of the Boone Lodge and Worshipful Grand Master of the Grand Lodge of Arkansas.

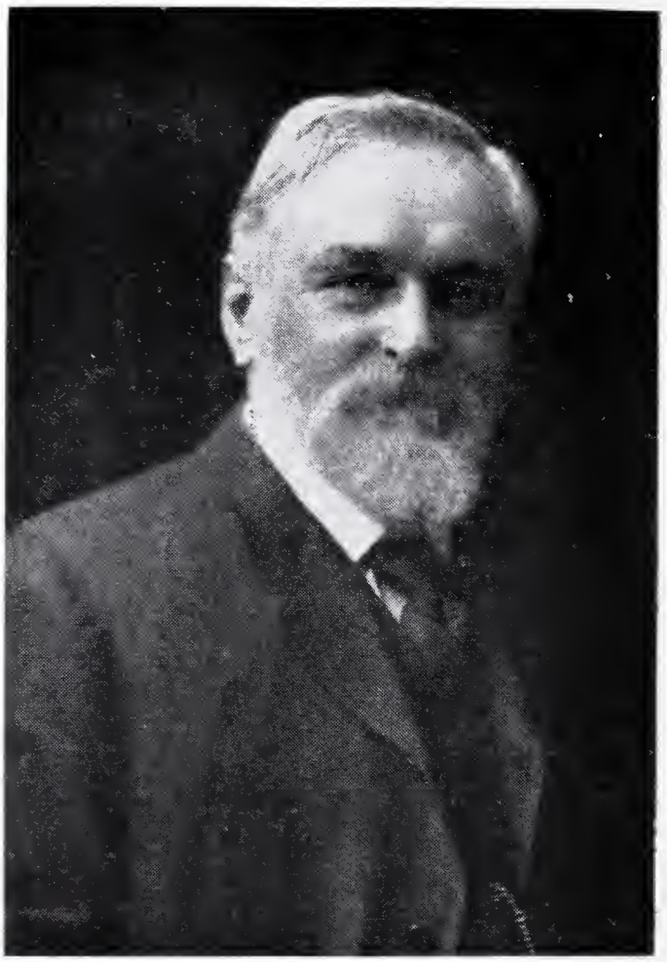
*General Practice, 825 North Spring Street, Harrison, Arkansas 72101.

He laid the cornerstone for Masonic Temple in Little Rock.[3]

Dr. Kirby was also active in the organization of his profession. He was president of the Boone County Medical Society in 1882 and of the Arkansas Medical Society in 1904. He also served as councilor for many years.[2]

Leonidas and Rhoda were blessed with seven children, one died in infancy. Three sons became physicians and the only daughter married a physician; two grandsons became physicians and a third died while in the junior class in medical school.[4]

With the death of Dr. Leonidas Kirby on August 20, 1926, the family, Boone County and the State of Arkansas lost one of the greatest gentlemen of all time.[2]



REFERENCES

1. *Reminiscent History of the Ozark Region,* Goodspeed Brothers Publishing Company, Chicago, 317-318, 1894.
2. *Harrison Daily Times,* Harrison, Arkansas, August 20, 1926, page 1.
3. *Harrison Daily Times,* Harrison, Arkansas, October 13, 1965, page 1.
4. Gladden, Mrs. J. C.: "Pioneer Doctors of Arkansas", *Journal of the Arkansas Medical Society,* Vol. *45,* 6:118-120, Nov. 1948.



MEDICINE IN THE NEWS



COUNCIL MINUTES

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, November 17, in the Camelot Hotel, Little Rock. Present were Lawson, Burge, Lilly, Weber, Wilkins, Deneke, J. Kolb, Osborne, Lytle, P. Bell, Hestir, Langston, Wallick, Sanders, Warren, Joyce, Bracken, Jones, Jouett, Douglas, Pearson, Phillips, Wilson, Saltzman, Verser, Crow, Norton, Hart, Charles Rodgers, Robert Benafield, George Mitchell, Mrs. Jerry Blaylock, Mr. Mitchell and guest Mr. Simmons, Mr. Wroten, Mr. LaMastus, Miss Richmond, and C. C. Long.

The Council transacted business as follows:

1. The Council approved minutes of the September 22nd meeting of the Council.
2. The Council approved actions of the Executive Committee on September 24th.
3. Legal Counsel Mike Mitchell discussed model legislation for a program for impaired physicians. Dr. Joe Verser, secretary of the State Medical Board, expressed concern about problems with funding such a program. Dr. Verser extended an invitation to a State Medical Board banquet meeting on December 4th in Little Rock at which Dr. Talbott of Georgia will discuss the Georgia program for impaired physicians. Mr. Mitchell received general agreement for his attendance at the function.
4. Dr. Joe Norton, Chairman of the Society's Sub-Committee on Aging, presented a form proposed by the American Association of Retired Persons for use by patients in asking physicians to accept Medicare assignment. The Council voted approval of the form as proposed.
5. Chairman Lawson announced his selection for appointment to a number of positions.
 (1) The Council approved the appointment of Dr. E. J. Jones of Batesville to the Community Health Consortium.
 (2) The Council approved the appointment of Dr. L. J. Pat Bell to a four-year term on the Budget Committee, beginning January 1, 1986.
 (3) The Council approved the designation of F. E. Joyce as chairman of the Budget Committee.
6. The Council voted to have a cash bar at the Council reception during the 1986 annual meeting in Little Rock.
7. Charles Rodgers, a member of the Annual Session Program Committee, reported to the Council on plans for the scientific program at the 1986 meeting. He reported that the program would be worked around the theme "Vascular Disease" and well-known speakers in that field would be used for the program. He indicated that the committee would attempt to arrange sponsorship for the speakers and asked for Council authorization for payment of honoraria not covered by sponsorship.

 The Council voted to request that in order to allow the program committee to proceed with arranging speakers, the Budget Committee seriously consider authorizing up to $4,000 to cover honoraria for speakers if the committee cannot arrange full sponsorship. The Council was advised that the program committee would not be using speakers from the specialty groups.
8. Chairman Lawson advised the Council that the eighth councilor district now has 618 active dues-paying, active dues-waived, and Life members. The councilor district has been represented by five councilors. The district members had recommended that Dr. Warren Douglas be accepted by the Council as an additional councilor for the district.

 The Council voted to use the councilor district's active, dues-paid and Life membership count as of December 31 as the basis for councilor representation.

 The Council voted to accept the recommendation of the councilor district to add Dr. Douglas to the Council with the term being November 17, 1985, to April 20, 1986.
9. The Council voted to refer to the Constitu-

tional Revisions Committee for study and report back to the Council the question of whether the cut-off date for determining county society representation in the House of Delegates should be December 31 or March 1.

10. Dr. Ronald Bracken, councilor from the Seventh District, advised the Council of the illness of Dr. E. K. Clardy. The Council directed that a letter be forwarded to Dr. Clardy expressing the Council's wishes for his speedy recovery.

The Council went into Executive Session for consideration of the Report of the Search Committee and the Budget Committee. Minutes of the Executive Session are a separate document.

APPROVED: J. Larry Lawson, M.D.
Chairman of the Council

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EXECUTIVE SESSION MINUTES
COUNCIL OF THE ARKANSAS MEDICAL SOCIETY
November 17, 1985

Dr. John Hestir, Chairman of the Search Committee for an Executive Vice President, reported in detail to the Council about the applicants, the job, and the fact that the committee met with four of the applicants for detailed interviews. He reported that the quality of the applicants interviewed was extremely high. He reported that the committee unanimously agreed that Ken LaMastus was the most qualified candidate and recommended him to the Council. Several members of the Council spoke individually as well, supporting the qualifications of Mr. LaMastus and the Council voted unanimously to hire Ken LaMastus as the new Executive Vice President.

Dr. Jim Lytle, Chairman of the Budget Committee, presented the proposed budget for 1986. There was considerable discussion about several aspects of the proposed budget. In general, the Council seemed to feel that the Budget Committee had done an excellent job. On a motion by Dr. William Jones, and seconded by Dr. Lloyd Langston, the budget was accepted as presented except for the deletion of the 5 percent raise for all of the employees of the Society who would not be moving to Little Rock. It was pointed out that those employees were to receive severance pay, a reward for their commitment to stay on until the Fort Smith office was closed and, based on this fact, the Council approved a motion to delete the 5 percent raise in pay proposed in the budget. The Council voted to give the Executive Vice President the same rate of severance pay as the other employees.

Dr. Ken Lilly moved, and Dr. Ray Jouett seconded, and the Council unanimously approved a base salary for the new Executive Vice President, Ken LaMastus, of $55,000 per year. The motion included that this salary would start April 1, 1986.

Dr. Ray Jouett reminded the Council that Dr. Payton Kolb would be running for the Constitution and Bylaws Committee of the American Medical Association and the Council unanimously voted to support his nomination on a motion by Dr. Jouett and seconded by Dr. Lytle. The motion also included a recommendation to the Budget Committee that they budget $500 to $1,500 expenditures to support Dr. Kolb's candidacy.

APPROVED: J. Larry Lawson, M.D.
Chairman of the Council

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1986 BUDGET FIGURES

	1986 BUDGET
INCOME	
Membership Dues	$527,085.00
Journal Advertising	50,000.00
Booth Income	14,000.00
Annual Session	6,000.00
AMA Reimbursement	5,000.00
Miscellaneous & Rosters	6,000.00
Interest	30,000.00
Specialty Desk	1,400.00
INTRAV Reimbursement	3,000.00
Continuing Medical Education	500.00
	$642,985.00
EXPENSES	
Salaries	$247,745.00
Travel & Convention	50,000.00
President's Travel	3,000.00
Taxes	20,710.00
Retirement	25,500.00
Stationery & Printing	12,000.00
Office Supplies & Expenses	20,000.00
Telephone & Telegraph	17,000.00
Rent	84,127.00
Postage	33,500.00
Insurance & Bonds	27,000.00
Auditing	6,000.00
Council Expense	6,000.00
Lobbying Activities	1,500.00
Journal Printing	65,000.00
Annual Session	40,000.00

Winter Meeting	2,000.00
Dues & Subscriptions	6,000.00
Gifts & Contributions	2,000.00
Woman's Auxiliary	1,700.00
Legal Services	36,000.00
Schaefer Lawsuit	25,000.00
Special Committee	2,000.00
Rural Health	500.00
Miscellaneous	7,400.00
Freight & Express	100.00
Office Equipment	69,170.00
Continuing Medical Education	600.00
Moving Expense	3,000.00
Miss Richmond's Early Retirement	3,000.00
	$817,552.00

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EXECUTIVE COMMITTEE MINUTES

The Executive Committee met on Sunday, November 17, 1985, at the Camelot Hotel in Little Rock. Present were Chairman Larry Lawson, President John P. Burge, President-elect Ken Lilly, Secretary James Weber, Immediate Past President Charles F. Wilkins, Jr., and C. C. Long.

The Executive Committee authorized paying the expenses of a representative of the Student Medical Section to attend the Student and Resident Meeting in Washington, D. C., in December, 1985.

APPROVED: J. Larry Lawson, M.D.
Chairman of the Council

* * * *

EXECUTIVE COMMITTEE CONFERENCE CALL

The Executive Committee conferred by conference telephone on November 25th with Chairman Lawson, President Burge, President-elect Lilly, Immediate Past President Wilkins, Executive Vice President Long and Associate Executive Vice President Richmond participating.

Miss Richmond discussed a proposal by the Annual Session Scientific Program Committee that solicitations for speaker sponsorship include an offer of free exhibit booth space at the convention. Upon motion of Wilkins, the Executive Committee voted to keep speaker sponsorship separate from booth space. Firms sponsoring speakers are not to be provided free booth space. The Executive Committee indicated approval of soliciting pharmaceutical firms, surgical supply houses, hospitals, and hospital corporations for speaker sponsorship.

Dr. Long discussed renewal of the Society's "Association Professional Liability" policy which expires on December 9, 1985. The quote for renewal reduced coverage by $500,000 and increased the premium from $4,420 to $8,860. There was general agreement by the Executive Committee that the proposal for renewal should be accepted if a better proposal could not be obtained.

APPROVED: J. Larry Lawson, M.D.
Chairman of the Council

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EXECUTIVE COMMITTEE MINUTES
December 19, 1985

Dr. Larry Lawson, chairman of the Council, contacted the other members of the Executive Committee and the unanimous decision was to advise the Annual Session Program Committee that they recommended that Senator Dale Bumpers be invited to present the Elvin Shuffield Lecture at the upcoming annual session.

APPROVED: J. Larry Lawson, M. D.
Chairman of the Council

PROCEEDINGS OF SOCIETIES

PHILLIPS COUNTY MEDICAL SOCIETY

The Phillips County Medical Society met on December 13, 1985, at the Helena Hospital and elected officers for 1986. Dr. Alfred Berger, president, presided. Those nominated and unanimously elected to serve for 1986 were Dr. P. Vasudevan, president, and Dr. H. N. Faulkner, secretary-treasurer.

CRITTENDEN COUNTY MEDICAL SOCIETY

The Crittenden County Medical Society has elected new officers for 1986. The new officers are Dr. Trent Pierce, president; Dr. Thomas Gray, vice president; Dr. Kenneth Nadeau, secretary, and Dr. Robert C. Ford, treasurer.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

SYMPOSIUM ON CRITICAL CARE MEDICINE

Presented by Glen F. Baker, M.D., and Jim Farris, Ed.D., *February 26-March 1,* Sheraton Lakeshore Resort, Hot Springs. Eleven and three-fourths hours Category I credit. Fee: $150; Residents and Fellows $75. Sponsored by UAMS.

ANNUAL SURGICAL SYMPOSIUM, "ADVANCES IN GI AND COLORECTAL SURGERY"

Presented by Robert W. Barnes, M.D., and G. Richard Westerman, M.D., *March 20-22,* (Thursday: 4:00 p.m., Hara Lecture, UAMS Education Building, Room G/131; Friday: 7:30 a.m.-11:45 a.m.; Saturday: 7:30-12:00 noon), Arlington Hotel, Hot Springs. Approximately six hours Category I credit. Fees: ACS members $25; non-members $75. Sponsored by UAMS.

CARDIOLOGY UPDATE 1986: ACUTE MYOCARDIAL INFARCTION

Presented by Joseph A. Franciosa, M.D., *April 2, 8:25 a.m.-4:30 p.m.,* University Conference Center, Excelsior Hotel, Little Rock. Six hours Category I credit. Fee: $65. Sponsored by UAMS.

EMERGENCY MEDICINE UPDATE 1986

April 3-4, Hilton Inn, Little Rock. Sponsored by Baptist Medical Center. Call Medical Education Office, 227-2672, for further information.

SECOND ANNUAL JAY LARRISON MEMORIAL SEMINAR: CONDUCT DISORDERS

Presented by Richard L. Livingston, M.D. and Gail Eisenhauer, M.D., *April 4,* University Conference Center, Excelsior Hotel, Little Rock. Time, credit hours and fee to be announced.

USE OF LASER IN DERMATOLOGY

Presented by Dr. Spencer Albright, *April 15, 7:30 p.m.,* Spavinau Supper Club, Gravette. One hour Category I credit. Sponsored by UAMS AHEC-NW.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Colposcopy-Pap Smear Clinic, fourth Tuesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:15 p.m. to 1:00 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, second and fourth Thursday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Gyn-Pathology Conference, second Friday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Pediatric Conference, second and third Friday, 12:15 p.m. to 1:00 p.m., (second Friday, Warner Brown Hospital, third Friday, Union Medical Center).

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology-Mortality Conference, second Thursday, 3:00 p.m., VAMC.
Radiology Conference, third Thursday, 1:00 p.m., VAMC.
ICU Lecture Series, second Friday, 1:30 p.m., VAMC.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.

Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pulmonary Conference, each Monday, 3:00 p.m., Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Genetics Conference, each Wednesday, 1:00 p.m., Annex Conference Room.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neuroscience Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
General Pediatrics Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Pathology Conference, each third Tuesday, 3:00 p.m. to 4:00 p.m., Pathology Library.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Surgery Conference, each Thursday, 7:30 a.m. to 8:30 a.m., Conference Room #2.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #1.

LITTLE ROCK — ST. VINCENT INFIRMARY

Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
General Medicine Journal Club, first and third Tuesday, 12:00 noon to 1:00 p.m., Medical Affairs Conference Room.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Cancer Conference, first Wednesday, 12:00 noon to 1:00 p.m., CARTI Auditorium.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Education Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Education Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interhospital GI Problems Conference, first Monday, 6:00 p.m., St. Vincent Infirmary, Classroom 3, Education Wing.
OB/Gyn Grand Rounds, each Wednesday, 7:30 a.m., UAMS Education Building, Room G/141B.
Psychiatry Grand Rounds, each Thursday, 12:00 noon, UAMS Child Study Center Auditorium.
Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Education Building, Room G/131.
Surgical Science Seminar, each Saturday, 8:00 a.m., UAMS Education Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS ACC Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Education Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Education Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Education Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Education Building, Room G/135.
Arkansas Academy of Pathology, first Wednesday, 5:30 p.m., Coy's Restaurant.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Medicine Service Teaching Conference, each Monday, 3:30 p.m., NLRVA, Building 66, Room 38.
VA Psychiatry Service Lecture Series, each Wednesday, 1:00 p.m., NLRVA, Building 170.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.
VA Surgery Tumor Board, each Tuesday, 1:00 p.m., LRVA, Room 2D109 and 2D114.
St. Vincent's Urology Grand Rounds, first Tuesday, 5:30 p.m., St. Vincent Infirmary, Education Building, Room 159.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC-SOUTHWEST

Tumor Conference, November 6 and December 4, 7:00 a.m., St. Michael Hospital.
Chest Conference, November 20, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

THINGS TO COME

March 5-9

1986 Pan American Allergy Society Training Course and Seminar. Four Seasons Hotel, San Antonio, Texas. Approved for 31 hours AMA/PRA Category 1; 31 hours AAOA; 31 hours 2-D AOA. For further information contact Betty Kahler, Pan American Allergy Society, 229 Parking Way, Lake Jackson, Texas 77566; telephone 1-409-297-8964 or 1-409-297-4069.

March 13-16

Eighth Annual Seminar on Perinatal Medicine. Hotel Royal Plaza, Walt Disney World, Lake Buena Vista, Florida. 18.5 AMA Category I Credit. Fee: $350.00 before February 13; $375.00 after February 13. For more information contact UAMS, Office of Continuing Education for Physicians, 4301 West Markham Street, Little Rock, Arkansas 72201; telephone 661-5000.

March 24-29

Counseling Strategies for Physicians. Oahu, Hawaii. Sponsored by the University of Texas at Tyler and the University of Texas Health Science Center at Houston. Program is designed to introduce the latest techniques and research findings on matters that influence doctor-patient relationships. The program is approved for 17 hours AMA/PRA Category 1 credit. Registration fee is $325.00. For further information call 1-800-332-8747 and specify Program Code 975 DLB.

April 2-5

Symposium on Prevention of Infections in Pediatric Office Practice and Sixth Annual Pediatric Infectious Disease Seminar. Sponsored by the Health Science Center at Dallas. Hyatt Regency Hotel, New Orleans, Louisiana. 23 hours Category 1, AMA.

Registration fee: Pre-registered $300.00; $225.00 residents; on-site registered $325.00; $250.00 residents. For further information contact Marian Troup, Department of Pediatrics, University of Texas Southwestern Medical School, 5325 Harry Hines Boulevard, Dallas, Texas 75235; telephone 1-214-688-3439.

April 17-20

Vascular Disease is the theme for the 110th Annual Session of the Arkansas Medical Society, which is to be held at the Excelsior Hotel and Statehouse Convention Center in Little Rock.

April 17-19

Forty-Eighth Annual Meeting of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society. Broadwater Beach Hotel, Biloxi, Mississippi. 8 hours Category 1, AMA. For more information contact Ben A. Davis, Jr., CAE, Louisiana-Mississippi Ophthalmological and Otolaryngological Society, Post Office Box 12314, Jackson, Mississippi 39236-2314; telephone 1-601-956-7787.



PERSONAL AND NEWS ITEMS

DR. ROY ANNOUNCES CANDIDACY

Dr. Hampton Roy, a Little Rock ophthalmologist, has formally announced that he will be a candidate for the Democratic nomination for Lieutenant Governor.

DOCTORS ELECTED TO FELLOWSHIP

Several physicians were recently elected Fellows of the American College of Surgeons. They are Dr. Craig J. Brown and Dr. C. R. Magness of Fayetteville, Dr. Michael C. Reese of Rogers, and Dr. Lee Andrew Forestiere of Pine Bluff.

DR. MARTIN JOINS CLINIC

Dr. Rebecca Edge Martin has joined the Arkansas Internal Medicine Clinic in North Little Rock for the practice of Internal Medicine and Infectious Diseases.

MEDICAL SOCIETY INFORMS PUBLIC

Working under the direction of the Union County Medical Society, Dr. Jacob Ellis, Director of the South Arkansas Area Health Education Center, chairs a special committee charged with coordinating and disseminating information to the community concerning AIDS. The committee's first report, "AIDS—A Medical Report to the Community", explains AIDS and how to adequately guard against the infection. Committee members include Dr. Bert Dougherty, Dr. Steve Jones, and Dr. Berry Lee Moore, Jr., of El Dorado.

CANCER RESEARCH CENTER REPRESENTATIVES VISIT

Dr. Kent Westbrook and Dr. Harry P. Ward, representatives of the Arkansas Cancer Research Center (ACRC), recently spoke to the Mississippi County Medical Society about the center. ACRC, the $7 million research, education and patient care facility, is an outgrowth of the University of Arkansas for Medical Sciences.

DR. HOVIOUS PARTICIPATES

Dr. John Hovious, III, participated in the "Bowl-For-Breath" fund-raiser held at the Blytheville Bowling Center. The event was sponsored by the Cystic Fibrosis Foundation. The funds will be used to help children suffering from the lung disorder.

DR. DEROSSITT ELECTED TO FELLOWSHIP

Dr. James P. DeRossitt, III, of Forrest City was recently elected a Fellow of the American College of Obstetricians and Gynecologists.

DR. ANDERSON APPOINTED

Dr. Les Anderson of Lonoke has been appointed to the Criminal Detention Facilities Review Commission by Governor Bill Clinton. The Criminal Detention Review Commission was created by Act 882 of 1985. The commission will review present minimum standards for local jails, prescribe new standards as needed, and publish and distribute the standards to local authorities.

DR. HAMMONS DONATES SERVICES

Dr. Edward Hammons of Forrest City recently donated his services to correct a hernia on an eight-year-old boy from Honduras. Honduran physicians refused to operate on the child because he had had surgery once before. The operation was performed at Baptist Memorial Hospital in Forrest City. The child was flown to Forrest City with funds raised by members of the First Baptist Church in Forrest City.

VASUDEVANS RECEIVE CITIZENSHIP

Drs. Parthasarathy and Kanaka Vasudevan recently received their United States citizenship. Dr. Parthasarathy Vasudevan is a native of Malaysia and his wife, Dr. Kanaka Vasudevan, is a native of India. They have been practicing in the Helena area for eight years.

DR. DESROCHERS AND DR. BAKER ELECTED TO BOARD

Dr. Paul Desrochers has been named to the Board of Advisors for Harbor View Mercy Hospital in Fort Smith, the psychiatric division of St. Edward Mercy Medical Center. Dr. Desrochers is Chief of Psychiatry for St. Edward Mercy Medical Center and Harbor View Mercy Hospital. Dr. Max A. Baker, Medical Director of Harbor View Mercy Hospital, will serve as an ex-officio member of the board.



NEW MEMBERS

DR. MARTHA SPARROW

Dr. Sparrow, a native of Monroe, Louisiana, has recently joined the Jefferson County Medical Society.

She received her Bachelor of Science degree from Northeast Louisiana University in Monroe, in 1970. Dr. Sparrow is a 1974 graduate of the Louisiana State University School of Medicine in New Orleans. She served her internship and residency at Charity Hospital of Louisiana at New Orleans.

Dr. Sparrow has joined the staff of the Children's Clinic at 1420 West 43rd Street in Pine Bluff for the practice of Pediatrics. She is board certified in Pediatrics.

DR. DAVID THOMAS NIXON

Dr. Nixon has also joined the Jefferson County Medical Society. He is a native of Pine Bluff.

Dr. Nixon is a 1974 graduate of Hendrix College in Conway and a 1980 graduate of the University of Arkansas College of Medicine. He served a flexible internship and residency in Ophthalmology at the University of Arkansas for Medical Sciences.

Dr. Nixon practices Ophthalmology at 1716 West 42nd Street in Pine Bluff.

DR. ELIZABETH R. RANTZ

Dr. Rantz has recently joined the Washington County Medical Society. She is a native of San Francisco, California.

Dr. Rantz is a 1969 graduate of Stanford University and a 1977 graduate of the University of Kentucky College of Medicine in Lexington. She served her residency in Internal Medicine at San Joaquin General Hospital in Stockton, California.

Dr. Rantz is in General Practice in Fayetteville. Her address is Post Office Box 1624, Fayetteville.

DR. JACK A. HURST

Dr. Hurst, a native of Breaux Bridge, Louisiana, is another new member of the Washington County Medical Society.

He received his pre-medical education at the University of Southwestern Louisiana in Lafayette and the American University of Beirut in Lebanon. Dr. Hurst is a 1979 graduate of the Louisiana State University School of Medicine in New Orleans. He served his residency in Neurosurgery at Charity Hospital of Louisiana in New Orleans.

Dr. Hurst practices Neurosurgery at 2907 East Joyce in Fayetteville.

DR. JANET L. KENDRICK

Dr. Kendrick, a native of Brooklyn, New York, is a new member of the Pulaski County Medical Society.

She is a 1975 graduate of Oberlin College in Oberlin, Ohio, and a 1982 graduate of the University of Cincinnati College of Medicine. She served her residency in Family Practice at Brookdale Hospital Medical Center in Brooklyn, New York.

Dr. Kendrick is in Family Practice at the College Station Adult Clinic in College Station.

DR. JOHN L. VANDER SCHILDEN

Dr. Vander Schilden has also joined the Pulaski County Medical Society. He was born in Evanston, Illinois.

Dr. Vander Schilden is a 1973 graduate of DePaul University at Greencastle, Indiana, and a 1977 graduate of Rush Medical College in Chicago, Illinois. His postgraduate training in Orthopaedics was at the University of Florida in Gainesville and the University of Southern Florida at Tampa.

Dr. Vander Schilden is affiliated with the University of Arkansas for Medical Sciences where he practices Sports Medicine and Orthopaedic Trauma.

RESIDENT MEMBERS

DR. JACK H. BRACKIN

Dr. Brackin is a native of Baldock, South Carolina.

He is a 1983 graduate of the University of Arkansas College of Medicine. He is a Family Practice resident at the Area Health Education Center in Fayetteville. Dr. Brackin has joined the Washington County Medical Society.

DR. JOSEPH W. WILSON

Dr. Wilson, a 1985 graduate of the University of Arkansas College of Medicine, has joined the

Pulaski County Medical Society. He is serving his residency in Surgery at the University of Arkansas for Medical Sciences.

DR. RONALD W. SIMPSON

Dr. Simpson is a new member of the Craighead-Poinsett County Medical Society. He is a native of Detroit, Michigan.

Dr. Simpson is a 1985 graduate of the University of Arkansas College of Medicine. He is currently serving a residency in Family Practice at the Area Health Education Center in Jonesboro.

OBITUARY

DR. EDGAR K. CLARDY

Dr. Edgar K. Clardy of Hot Springs died December 19, 1985. He was born December 8, 1920, in Jonesboro.

Dr. Clardy graduated from the University of Arkansas in Fayetteville in 1942. He began practicing in Hot Springs shortly after graduating from the University of Arkansas College of Medicine in 1945, and was a former Medical Director of the Leo N. Levi National Arthritis Hospital in Hot Springs. Dr. Clardy had been a member of the Council of the Arkansas Medical Society since 1982, serving as a Councilor for the Seventh District. He was a member of the Southern Medical Association.

Dr. Clardy is survived by his wife, Helen, a son, Lieutenant Colonel W. F. Clardy, a physician in the U. S. Air Force, and a daughter, Martha Chamness of Little Rock.

DR. ROY I. MILLARD

Dr. Roy I. Millard of Little Rock, co-founder of the Millard-Henry Clinic in Russellville, died December 16, 1985. He was born March 4, 1904, in Blue Ball (Yell County).

Dr. Millard attended Hendrix College and graduated in 1928 from the University of Arkansas College of Medicine. He began his practice of medicine in Dardanelle in 1929, where he remained until moving to Russellville and opening his first clinic in 1936. In 1945, he co-founded the Millard-Henry Clinic in Russellville.

He was a member of the Pope County Medical Society and the 50 Year Club of the Arkansas Medical Society. Dr. Millard was a Fellow of the American College of Surgeons, and a member of the Pan-Pacific Surgical Congress, and the Royal Arch Masons.

He was a former president of the Russellville Chamber of Commerce and served as a board member for many years. He served as a member of the Board of Directors of the Peoples Bank and Trust Company for 22 years.

Dr. Millard is survived by his wife, Mildred, a son, Dr. Leighton Millard of Little Rock, a brother and two sisters.

DR. NEIL H. SIMS

Dr. Neil H. Sims of Little Rock died December 17, 1985. He was born December 16, 1923 in Fort Smith.

Dr. Sims graduated from the University of Arkansas College of Medicine in 1950. In 1954, he completed a Pediatric residency at Johns Hopkins Hospital in Baltimore.

Dr. Sims practiced in Baltimore from 1954 to 1966 and served as an instructor at Johns Hopkins Hospital. He remained on the John Hopkins Hospital faculty until 1971, rising to Associate Professor of Pediatrics. He then returned to Arkansas to serve as Professor of Pediatrics in the University of Arkansas College of Medicine. In 1979, Dr. Sims became Assistant Dean of the UAMS Postdoctoral Education Program and had served as Associate Dean since 1982.

He also served as Associate Chairman of the UAMS Pediatric Department from 1973 to 1975 and as Director of the Office of Continuing Education for Physicians from 1975 until the time of his death. He was Medical Director of Arkansas Children's Hospital from 1971 to 1973. Dr. Sims was a member of the American Academy of Pediatrics, the Ambulatory Pediatric Society, Johns Hopkins Medical Society, the Society of Sigma Xi, and the Association of American Medical Colleges. He served in the Pacific during World War II.

Dr. Sims is survived by his wife, Anne, three sons, and three daughters.

RESOLUTIONS



NEIL H. SIMS, M.D.

WHEREAS, the membership of the Pulaski County Medical Society notes with sincere sadness the recent death of an esteemed colleague, Neil H. Sims, M.D.; and

WHEREAS, Dr. Sims had achieved a most enviable position in the medical community, particularly in his chosen specialty of pediatrics; and

WHEREAS, he had touched the lives of so many of his fellow physicians as both a practitioner and an educator through his years of work at the Arkansas Children's Hospital and the University of Arkansas College of Medicine; therefore be it

RESOLVED, that this resolution be adopted and that it be made a part of the permanent archives of this Society; and be it further

RESOLVED, that a copy of this resolution be forwarded to Dr. Sims' family as a token of our heartfelt sympathy, and that a copy be made available to the Journal of the Arkansas Medical Society for publication.

By Order of the Memorials Committee

John D. Pike, M.D., Chairman
Henry Hollenberg, M.D.
Robert Watson, M.D.


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Propranolol hydrochloride (INDERAL®):

Propranolol is contraindicated in: 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide:

Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL®):

CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or propranolol should be discontinued (gradually if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned, the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patients should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide:

Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL®):

GENERAL. Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs, such as reserpine, should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY. Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

NURSING MOTHERS. Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

Hydrochlorothiazide:

GENERAL. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance: namely, hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs, irrespective of cause, are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, or during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS. Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY. Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS. Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL®):

Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia, congestive heart failure, intensification of AV block, hypotension, paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia, LE-like reactions, psoriasiform rashes, dry eyes; male impotence and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping; diarrhea, constipation; jaundice (intrahepatic cholestatic jaundice), pancreatitis; sialadenitis.

Central Nervous System: Dizziness, vertigo, paresthesias; headache; xanthopsia.

Hematologic: Leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, or narcotics).

Hypersensitivity: Purpura, photosensitivity; rash; urticaria, necrotizing angiitis (vasculitis, cutaneous vasculitis); fever, respiratory distress, including pneumonitis, anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm; weakness, restlessness, transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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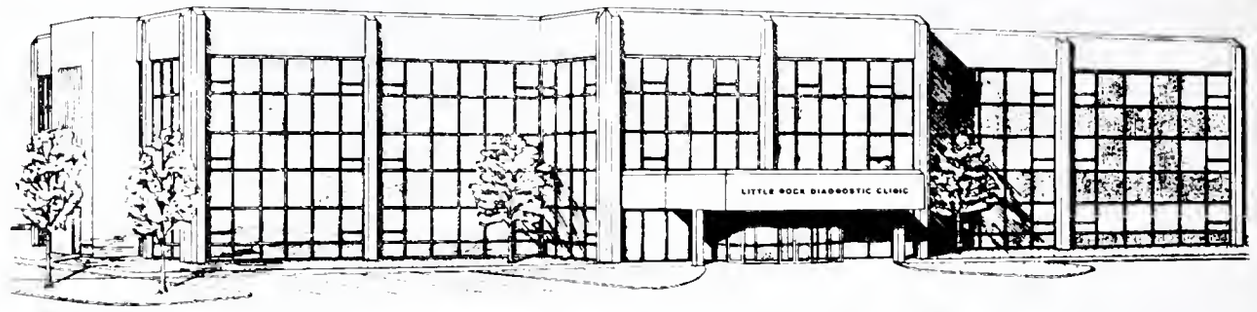
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One Medical Drive
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Brief Summary of Prescribing Information.

Indications and Usage: Management of anxiety disorders or short-term relief of symptoms of anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

Contraindications: Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

Warnings: Not recommended in primary depressive disorders or psychoses. As with all CNS-acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

Physical and Psychological Dependence: Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addiction-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

Precautions: In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown, but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper G.I. disease. Safety and effectiveness in children under 12 years have not been established.

ESSENTIAL LABORATORY TESTS: Some patients have developed leukopenia, some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

CLINICALLY SIGNIFICANT DRUG INTERACTIONS: Benzodiazepines produce CNS depressant effects when administered with such medications as barbiturates or alcohol.

CARCINOGENESIS AND MUTAGENESIS: No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

PREGNANCY: Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chlordiazepoxide, diazepam and meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may be pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

NURSING MOTHERS: It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

Adverse Reactions, if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

Transient amnesia or memory impairment has been reported in association with the use of benzodiazepines.

Overdosage: In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

Ativan® (IV) for (lorazepam) Anxiety

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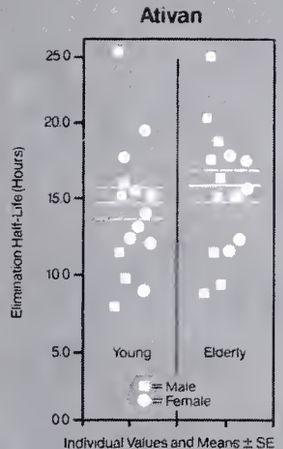
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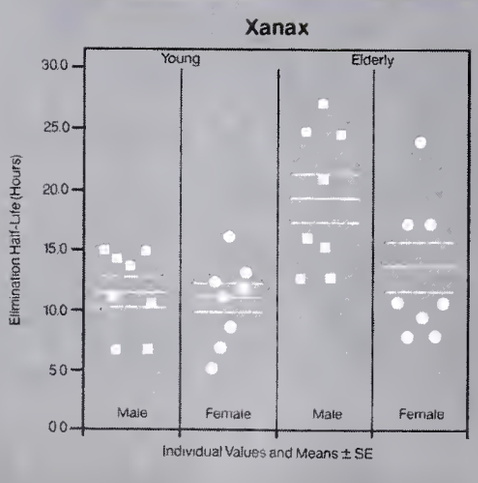
among leading benzodiazepines, has proof that its pharmacokinetics are not significantly altered by age.[1]

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References:
1. Greenblatt DJ: Clinical study, pharmacokinetics and bioavailability in the elderly, Ativan® (lorazepam). Data on file, Wyeth Laboratories.
2. Greenblatt DJ, Allen MD, Locniskar A, et al: Lorazepam kinetics in the elderly. Clin Pharmacol Ther 26:103, 1979.
3. Greenblatt DJ, Divoll M, Abernethy DR, et al: Alprazolam kinetics in the elderly. Arch Gen Psychiatry 40:287, 1983.

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LAKE VILLAGE. Lake Village, located in southeast Arkansas, has a service area population of approximately 84,000. County population 18,000. An excellent practice opportunity exists for an obstetrician/gynecologist. Currently, the nearest obstetrician/gynecologist is located in Greenville, Mississippi, approximately 20 miles away. The next nearest obstetrician/gynecologist is located in Pine Bluff, Arkansas, 1½ hours travel time from Lake Village.

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DeQUEEN. The Community Hospital of DeQueen is offering a guaranteed income incentive for certain physicians wishing to practice in DeQueen—internists, obstetricians/gynecologists, orthopaedic surgeons and urologists. Community Hospital of DeQueen is modern, well equipped and serves an area of four counties with a combined population of approximately 60,000.

DUMAS. Population 7,000 with a trade area population of 30,000. Seven physicians now practice in Dumas and are aiding in the effort to obtain additional general and family practitioners, an internist, and a pediatrician. New ultra modern facilities are near the 50 bed hospital. Dumas is 40 miles from Pine Bluff and 80 miles from Little Rock.

WALNUT RIDGE/HOXIE. Population 8,100; trade area population 20,000. Walnut Ridge is 90 miles northwest of Memphis, Tennessee. Opportunities exist in orthopaedic surgery, radiology, obstetrics/gynecology, and emergency medicine. Physicians would receive the complete cooperation from the hospital, medical staff and community. Group practice is available. Walnut Ridge/Hoxie presently has four family practitioners, one general surgeon, and one internist. Lawrence Memorial Hospital in Walnut Ridge is a 48-bed, general acute care facility, fully accredited by JCAH.

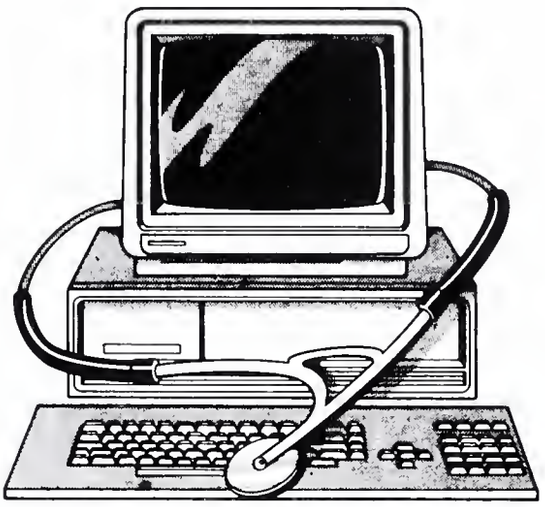
GURDON. Population 2,700; service area 6,000. An excellent opportunity exists in family practice. The community has a fully staffed and equipped clinic available adjacent to the 28 bed Gurdon Municipal Hospital. A new, modern inpatient facility was dedicated in 1984 and the community has a 65 bed nursing home and local ambulance service. Timber and timber related industries are the primary source of income. The International Paper Company recently completed a 30 million dollar expansion creating several new jobs in the area.

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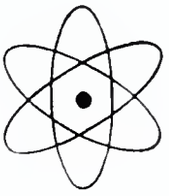
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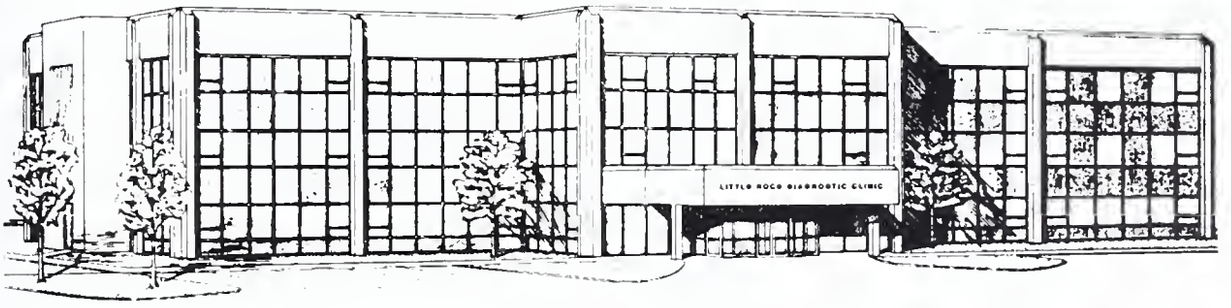
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Contraindications: Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

Warnings: Not recommended in primary depressive disorders or psychoses. As with all CNS-acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

Physical and Psychological Dependence: Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addiction-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

Precautions: In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown; but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper G.I. disease. Safety and effectiveness in children under 12 years have not been established.

ESSENTIAL LABORATORY TESTS: Some patients have developed leukopenia; some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

CLINICALLY SIGNIFICANT DRUG INTERACTIONS: Benzodiazepines produce CNS depressant effects when administered with such medications as barbiturates or alcohol.

CARCINOGENESIS AND MUTAGENESIS: No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

PREGNANCY: Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chlordiazepoxide, diazepam and meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may be pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

NURSING MOTHERS: It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

Adverse Reactions, if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

Transient amnesia or memory impairment has been reported in association with the use of benzodiazepines.

Overdosage: In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

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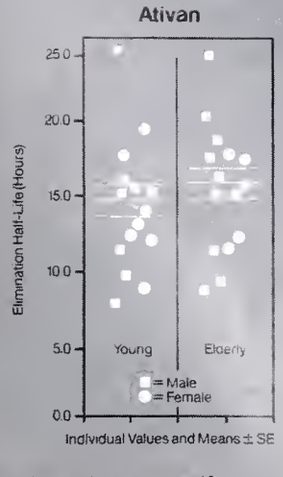
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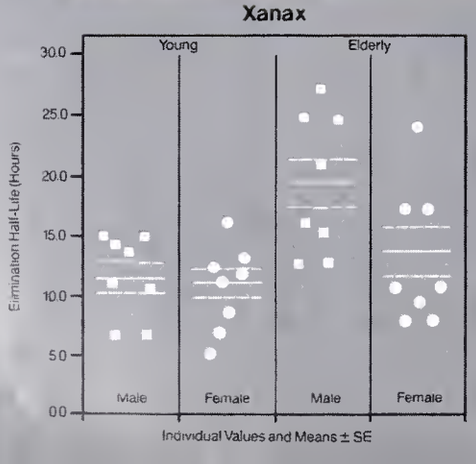
among leading benzodiazepines, has proof that its pharmacokinetics are not significantly altered by age.[1]

With Ativan, elimination half-life was very similar between young and elderly groups tested; differences did not approach statistical significance.[1]

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References:
1. Greenblatt DJ: Clinical study, pharmacokinetics and bioavailability in the elderly, Ativan® (lorazepam). Data on file, Wyeth Laboratories.
2. Greenblatt DJ, Allen MD, Locniskar A, et al: Lorazepam kinetics in the elderly. Clin Pharmacol Ther 26:103, 1979.
3. Greenblatt DJ, Divoll M, Abernethy DR, et al Alprazolam kinetics in the elderly. Arch Gen Psychiatry 40:287, 1983.

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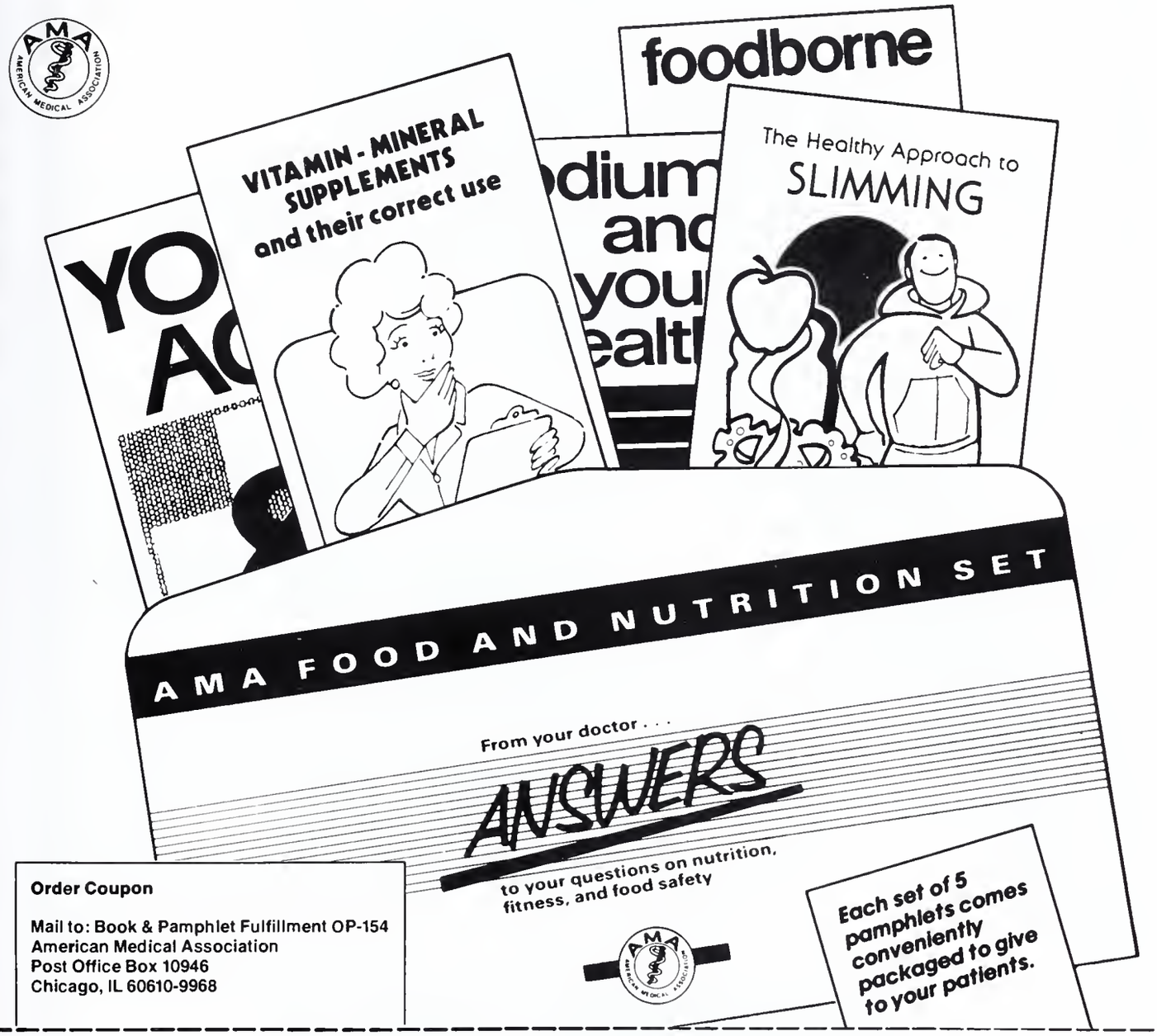
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Hashimoto's Thyroiditis and Its Relationship to Other Thyroid Pathology

Jeffrey L. Barber, M.D.,* Nancy L. Snyderman, M.D.,** and Edward Uthman, M.D.***

INTRODUCTION

Hashimoto's thyroiditis is an autoimmune disease which occurs simultaneously with other benign and malignant thyroid diseases. Controversy exists regarding the risk of developing thyroid malignancy in patients with Hashimoto's thyroiditis. The purpose of this investigation is to review our experience with Hashimoto's thyroiditis, including its relationships to other thyroid pathology.

CASE REPORTS

M. R. A 52-year-old white female presented with a ten year history of mild thyroid enlargement. Two months prior to admission, she noted a mass in the right neck. Physical exam confirmed a 2 cm. firm, non-tender mass in the right thyroid lobe. The T_4 was 5.5 (slightly decreased) and the TSH was 15.6 (two times normal). A radionucleide scan revealed heterogeneous uptake and a cold nodule in the right lobe. A subtotal thyroidectomy was performed. Histologic studies demonstrated Hashimoto's thyroiditis. Suppressive therapy was started postoperatively using levothyroxine.

K. K. A 28-year-old white female presented with a three month history of constipation, cold intolerance, and weight gain. One month prior to admission, a family member noticed a mass in the left neck. Physical examination confirmed the presence of a 2 cm. firm, slightly tender mass in the left thyroid lobe. The thyroid was slightly enlarged, smooth, and firm. The T4 was 9.8 (normal) and the TSH was 9 (slightly elevated). A thyroid scan revealed slightly heterogeneous uptake, but no nodules. Because of the clinical impression that a discrete mass was present, a CT scan was obtained. It revealed a 2 cm. mass of the posterior surface of the left thyroid lobe. A left thyroid lobectomy was performed. Histologic studies revealed Hashimoto's thyroditis and a benign adenoma. Suppressive therapy was started postoperatively using levothyroxine.

MATERIALS AND METHODS

One hundred thirty-five patients who underwent thyroidectomies from 1975 to 1985 at the University of Arkansas for Medical Sciences Hospital were included in this study. Their charts were reviewed for pertinent history, physical findings, diagnostic tests, type of surgery performed, pathologic diagnoses, and follow-up. Sixteen cases (12%) were initially identified as Hashimoto's thyroiditis or lymphocytic thyroiditis. These slides were reviewed by a pathologist (E. U.), who used strict criteria to confirm or reclassify each diagnosis. These criteria included: 1) extensive lymphocytic infiltration involving more than 50% of the sectioned tissue, 2) multiple lymphoid follicles, and 3) multiple foci of Ashkenazy cells. Nine cases of Hashimoto's thyroiditis were confirmed, including one which had previously been called lymphocytic thyroiditis. In another case, the diagnosis was changed from Hashimoto's to DeQuervain's thyroiditis.

RESULTS

All nine of the patients with Hashimoto's thyroiditis were females. The mean age at the time of diagnosis was 43 years. Five of the nine patients presented with a thyroid mass. Three of the nine patients had a diffusely enlarged thyroid. In one patient Hashimoto's thyroiditis was an incidental finding at the time of neck exploration for a parathyroid adenoma. Only one patient had clinical and laboratory evidence of hypothyroidism. Thyroid scans were performed preoperatively in seven patients, with cold nodules being

*Resident, Department of Otolaryngology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.

**Assistant Professor, Department of Otolaryngology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.

***Assistant Professor, Department of Pathology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.

identified in six patients and heterogeneous uptake in one. A cold nodule was the most common indication for surgery. On pathologic examination, two patients had associated thyroad malignancies—a papillary carcinoma and an immunoblastic sarcoma. Two had associated benign pathology—a follicular adenoma and a nodular colloid goiter.

DISCUSSION

Hashimoto's thyroiditis, also called struma lymphomatosa, lymphoadenoid goiter, or chronic lymphocytic thyroiditis, occurs most commonly in middle-aged women. Clinically, the thyroid gland appears diffusely enlarged and firm and may be nodular or asymetrical. These findings may cause the physician to suspect a thyroid neoplasm. The patients are usually clinically euthyroid and thyroid function tests most commonly reveal a normal or low free thyroxin index and an elevated TSH. With progression of the disease, overt hyperthyroidism develops. Antithyroglobulin or anti-mitochondrial antibodies are usually positive. The thyroid scan reveals heterogeneous radionucleide uptake, but hypofunctioning areas may appear as cold nodules.

The reported incidence of thyroid cancer in Hashimoto's thyroiditis patients ranges from 0.5 to 22.5 percent. There are several reasons for this disparity. The criteria for the pathologic diagnosis of Hashimoto's thyroiditis are not uniformly agreed upon.[6] A non-specific thyroiditis may be associated with thyroid neoplasms, and may be confused with Hashimoto's thyroiditis. Some studies include only surgical specimens, while others include cases of Hashimoto's thyroiditis diagnosed on clinical grounds or by needle biopsy.

Thomas and Rutledge reviewed 14 studies of thyroid surgical specimens in 21,431 patients.[5] They found a 13% incidence of Hashimoto's thyroiditis and an 11% incidence of carcinoma. They reported their own series of 260 patients and found a 4% incidence of Hashimoto's thyroiditis and 29% incidence of cancer. The low incidence of Hashimoto's thyroiditis in the surgical specimens was attributed to their method of diagnosing Hashimoto's thyroiditis on the basis of clinical characteristics, lab data, and thyroid scan. A cutting needle biopsy was used when there was a dominant thyroid mass. This approach resulted in many cases of Hashimoto's thyroiditis detected without surgery and decreased the incidence associated with surgical specimens.

Holm studied 829 patients with Hashimoto's thyroiditis and 829 age and sex-matched controls with goiter.[3] Diagnoses were based on fine needle aspiration. Mean follow-up was 8.5 years. There was no statistically significant increased incidence of malignancy in the Hashimoto's thyroiditis group or the colloid goiter group. However, patients with Hashimoto's thyroiditis did have an increased risk of myeloproliferative and lymphoproliferative neoplasms. The risk of thyroid lymphoma was greatly increased with an estimated relative risk of 67.

Meier studied the question from a different angle. He first identified a group of 256 patients with thyroid carcinoma and then addressed the incidence of associated Hashimoto's thyroiditis.[4] Less than 1% of these patients also had Hashimoto's thyroiditis. He stated that this is similar to the incidence of Hashimoto's thyroiditis found at autopsy.

Hashimoto's thyroiditis is most commonly treated with thyroid suppression, although some authors have advocated surgery because of the alleged association with thyroid malignancies. Adequate doses of levothyroxine must be used to suppress TSH and should be continued for at least six to twelve months. Rarely does the gland become impalpable with suppressive therapy.

Clark has outlined the following indications for surgery: 1) pressure symptoms, 2) hyperthyroidism, 3) an enlarging goiter that is unresponsive to TSH suppression, 4) cosmetic deformity, and 5) suspicious nodule formation.[1]

The number of cases in our series is small and no statistically significant conclusions can be drawn regarding the premalignant potential of Hashimoto's thyroiditis. However, this series does indicate that Hashimoto's thyroiditis may co-exist with other benign or malignant thyroid diseases, including thyroid nodules. Consequently, careful patient selection is necessary prior to surgical intervention. The discovery of this disease is usually incidental and may not be suspected preoperatively.

SUMMARY

Our experience with Hashimoto's thyroiditis at the University of Arkansas for Medical Sciences revealed that this disease occurred in 7% of patients who undergo thyroidectomies. Twenty-

three patients had associated benign pathology and 23% had associated thyroid malignancies. The diagnosis of Hashimoto's thyroiditis was usually unsuspected preoperatively. This disease should be considered in the differential diagnosis of a patient who presents with thyroid disease and attention paid to operative guidelines.

ACKNOWLEDGEMENT

The authors wish to thank Shelly Carrel for her help in compiling data.

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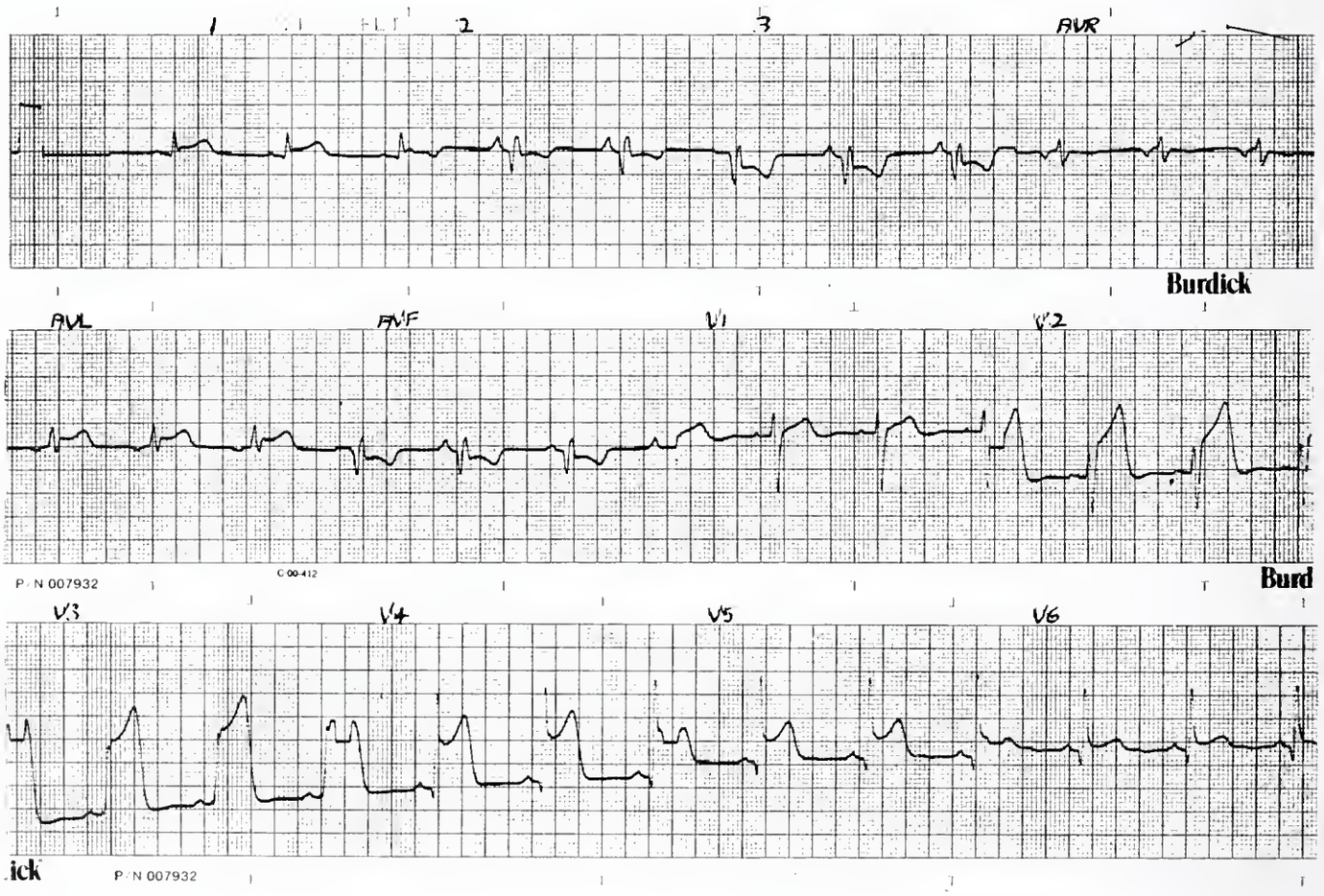
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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See **Answer on Page 451**)

HISTORY: R. B. is a 57-year-old smoker with both hypertension and diabetes. One week prior to admission, he experienced "fullness" in his chest lasting four hours, which he treated as indigestion. On the day of admission, the "fullness" in his chest returned, he experienced syncope, and was brought to the emergency section by his family. What do you think of his admission ECG and how might the trace relate to his episodes of chest fullness?



Gil Johnson, M.D.
Conway, Arkansas
John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

MRI in Orthopedics

H. Austin Grimes, M.D.*

Physicians seldom have the opportunity to report medical events which can aptly be described as "exciting". The introduction and clinical application of magnetic resonance imaging (MRI) is proving truly exciting as its potential as a diagnostic tool unfolds. For the first time, physicians can see inside the organism without subjecting the patient to the inconveniences and potential dangers inherent in older invasive techniques.

Its application to the diagnosis and evaluation of disease processes of the spine and the major joints will revolutionize our management of abnormalities in these areas. Heretofore, evaluation through existing test modalities required inconvenient, invasive tests—meaning hospitalization and presenting potential harmful effects from radiation and other causes.

In the near future, the ease and safety with which MRI examinations can be performed will increase the use of this diagnostic tool. Not infrequently, a patient who is involved in litigation may be thought to be an exaggerator or a pretender when all objective studies done in the average "work-up" are negative. Through MRI our diagnostic acumen is being refined to the point where we may demonstrate the presence of "degenerative joint disease", despite negative CT scans and myelograms. Degenerative joint disease of the spine or degenerative disc disease (whichever you prefer) is not usually thought of as a surgically treatable lesion except in disabling cases. But no matter how it is treated, it is an entity which has frequently been overlooked or ignored as a possible diagnosis in chronic spine complaints. The reason for this is a consequence of the difficulty we have had in establishing this diagnosis before obvious radiographic changes have occurred. In time, in most instances, changes such as disc space narrowing, lipping of the vertebral bodies adjacent to the space and vacuolization of calcific deposits within the spine will be observed. MRI shows a definite early diagnostic change as registered in the T_2 weighted image of the degenerated disc. This abnormal disc will appear darker than a normal disc on the recorded film. MRI is able to provide a definitive diagnosis which in many instances will antedate x-ray changes by months or even years. Without question, this potential will permit physicians' preemployment evaluation of spines to be much more accurate and meaningful. The significance of this benefit is yet to be appreciated fully by physicians as well as the insurance carriers and the legal profession. Orthopedic surgical judgment will be aided by MRI more than any other single test and hopefully will alter the results to the positive side. For instance, in a case recently seen by the author, the last two lumbar interspaces, L4-5 and L5-S1, were obviously narrowed as seen on routine x-ray examination. But the patient's complaints which were intermittent were referrable to a higher level of the spine. An MRI examination revealed two additional levels of degenerative joint disease, L1-2 and L2-3, but no evidence of herniation of the disc. A surgical procedure directed to the two lower levels (L4,5 and L5-S1) would have been unsuccessful in alleviating this patient's discomfort.

In another instance, degenerative disc disease was found in a 23-year-old female who injured her back on the job. All other tests, including the myelogram, had failed to demonstrate any pathology. However, her history seemed to be straightforward and was regarded as valid. For this

*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

reason, an MRI examination of the lumbar spine was obtained. This modality demonstrated definite degeneration of the L4-5 disc. This was not to say that trauma caused the disease process demonstrated. It did, however, establish the presence of a lesion which in all probability was aggravated by the injury described. It was conclusively demonstrated that the patient was not a malingerer and it was felt that her claim had been vindicated.

Discography was the only means of diagnosing degenerative disc disease prior to the introduction of MRI. This invasive technique, which introduced the potential of infection and an allergic reaction to the dye, can now be circumvented by the use of MRI.

The diagnosis of avascular necrosis of the hip (head of the femur) can be demonstrated in the early stages in many instances by MRI long before diagnostic x-ray changes can be seen.

Arthrography and diagnostic arthroscopy of the knee for evaluation of acute injuries may be replaced by MRI studies also. Further refinement in the grading and the staging of tumors through MRI techniques will enhance the evaluation of these problems before surgery and prior to radiation or chemotherapy. In addition, assessments of results will be made easier. Some tumors, which are still thought to be better evaluated by the CT scan—such as when ectopic calcification is important in grading—will be better evaluated by this new method once our experience is expanded.

Evaluation of arthritic joints other than the spine has not yet been recorded with sufficient data to replace existing modalities, but this is being studied intensively and is promising. Osteoporosis determination scanning gives a more scientific approach to evaluating this disease process. This service is available now and should find a large audience for application.

Correlation between MRI, lumbar myelography and CT scanning is being carried out at this point by at least a half dozen centers in the nation and their findings should be ready for universal dissemination by the spring of 1986.

As the MRI becomes more refined through the introduction of second and third generation machines, the present objections to its use (time and cost of examination) will be lessened. The cost of these examinations are already comparable to those of CT scanning and, at present, cheaper than a lumbar myelographic study. But even if the ultimate cost were not less, in these days when the concept of product liability is spreading throughout our litiginous society, it may be noted that the examination is safe and informative.

SUMMARY

The limits of MRI for diagnostic imaging has not yet been reached. Improved techniques will give us detailed anatomical images which have not been available in vivo. The old medical aphorism of "never be the first to use a new technique, nor the last" still applies, but if you have not found a use for MRI, so far, you may very soon become one of the last to do so.



The Development and Use of the Potts-Cozart Tube Test for the Detection of Isoniazid (INH) Metabolites in Urine

Willice T. Henderson*

Isonicotinic acid hydrazide (isoniazid, INH) is widely used as prophylaxis for persons who demonstrated positive skin tests (PPD) for tuberculosis without clinical or radiographic evidence of active tuberculosis, as well as for treatment of patients with active tuberculosis. Much of both involves out-patients responsible for their own medication. A simple and rapid method of detecting metabolites of INH in urine aids greatly in assessing patient compliance.

Over the years several methods have been developed to achieve or meet this need in assessing compliance. The most popular methods all involve chemical detection of one or more of the metabolites of INH found in urine. A rapid, simple qualitative procedure that can be used by non-laboratory personnel is of more practical value than the more complex quantitative procedures requiring expensive equipment and specially trained personnel.

Since 1967, a test tube method for detecting the metabolites of INH has been used by the Arkansas Department of Health with a great deal of success. The method has never been published. Several fruitless searches have been made in an effort to learn the origin and formulation of this procedure. Until recently we were unable to piece together the parts of this puzzle.

We are indebted to Rosalind Abernathy, M.D., of Arkansas Children's Hospital, Little Rock, Arkansas, and Robert T. Howell, D.P.H., of the Arkansas Department of Health, Little Rock, Arkansas, for encouragement in this search. We have now been able to piece together all the major pieces of this puzzle and to trace the development of this useful and highly practical procedure.

HISTORICAL BACKGROUND

In 1959, a paper by Nielsch and Giefer outlined a procedure for detection of INH metabolites in plasma and urine.[3] The procedure is complex but the article explained the chemistry quite clearly. Based on the same principles, a more simple and practical test for the detection of metabolites of isoniazid (INH) in urine was developed. In 1962, Littleman of Heahi Hospital, Honolulu, Hawaii, described a filter paper spot test for the detection of metabolites of INH in urine.[1] These authors drew heavily on the work of Nielsch and Giefer. Two years later William E. Potts, M.D., and Martha Ann Cozart of the Arkansas Department of Health developed a test tube method for detecting INH metabolites by modifying the spot test. This procedure was standardized by analyzing 195 samples with both the Belles Littleman procedure and the Potts-Cozart modification.[4] Dr. Potts stated in his notes that in all 195 instances "absolute correlation was obtained".[4] Unfortunately, the actual data are no longer available. Dr. Potts also stated that "no conflicting colors have been detected in 65 instances of patients receiving various other drugs".[4] The original data as to the type of other drugs tested in also unavailable.

Despite the lack of the original data, our confidence in the procedure has been enhanced by two additional factors: (1) The Potts-Cozart procedure has been extensively used by the Arkansas Department of Health since 1967 with remarkable success; (2) An article by Kilburn, et al., which

*Microbiologist Supervisor, Mycobacteriology Laboratory, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.

described a reagent-impregnated paper strip method for the detection of INH metabolites in urine.[2] This article documents 190 patients taking antituberculous drugs in addition to isoniazid, and 65 patients not taking INH but taking other antituberculous drugs or no drugs at all. The method was shown to be highly reliable and specific for detecting metabolites of INH in urine. Since the chemistry of the Potts-Cozart procedure is the same as the paper strip method of Kilburn, et al., the method of Potts and Cozart appeared to be valid.

PRINCIPLE OF THE POTTS-COZART PROCEDURE

Isonicotinic acid and isonicotinoyl glycine are among metabolites which are invariably found in human urine after ingestion of INH. These compounds are relatively stable indicators of INH ingestion. The pyridine ring of isonicotinic acid and isonicotinoyl glycine is split by cyanogen chloride to form a glulaconaldehyde derivative that condenses with barbituric acid to form a blue-purple polymethine dye.

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Potassium cyanide (reagent grade)
Test tubes (13 × 100mm)
Plastic dropper bottles (30ml)
Rubber stoppers to fit 13 × 100mm test tubes

TEST KIT PREPARATION

1. 30mg of barbituric acid is added to each 13 × 100mm test tube and capped with a rubber stopper. 100 tubes are prepared for each kit.
2. A 14% wt/vol solution of chloramine T is prepared. Place 25ml to 30ml in plastic dropper bottle. Label bottle solution #1.
3. A 5.6% wt/vol solution of potassium cyanide is prepared. Place 25ml to 30ml of solution in plastic dropper bottle. Label bottle solution #2.
4. Kits consist of 100 tubes of barbituric acid and 2 bottle of solution #1 and 2 bottles of solution #2.
5. An expiration date of six months from date of solution preparation is calculated and placed on each bottle.

TEST PROCEDURE

1. Add 2 to 4 drops of the urine to be tested to the test tube containing the 30mg barbituric acid.
2. Add one drop of solution #1 (chloramine T—14%).
3. Add one drop of solution #2 (potassium cyanide—5-6%).
4. Agitate tube for approximately 10 seconds. Results should be obtained within one minute.

INTERPRETATION OF TEST

1. Positive—color range from distinct blue to purple.
2. Negative—no color change, or colors other than blue or purple.

NOTE: Other colors formed may be due to drugs taken by the patient other than antituberculosis drugs, e.g., aspirin gives a light pink color.[4] A positive result should occur within 30 hours of the last administered dose of INH, provided gastric absorption is normal. This can be checked by administration of the drug with subsequent testing of the urine after 90 minutes.

SUMMARY

The combination of barbituric acid of reagent grade with the isoniazid metabolites, isonicotinoyl glycine and isonicotinic acid, in the presence of cyanogen chloride gas in solution, produces the characteristic blue to purple color at a suitable pH. The reaction is of the same chemical nature as all other tests for isoniazid metabolites in urine.

This simple procedure has been used by nurses and aides in the 75 county health department chest clinics throughout Arkansas for 18 years. The correlation with other ways of assessing patient compliance has been excellent. Use of this method is invaluable in assuring that INH is taken regularly by persons responsible for their own treatment as outpatients.

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Pediatric Update:

Newer Approaches to the Treatment of Craniosynostosis

William M. Chadduck, M.D., and Steven L. Cathey, M.D.*

Craniosynostosis or premature closure of the cranial sutures is a frequent problem seen in pediatric neurosurgical centers. As early as 1890, craniectomies for opening prematurely fused sutures were done.[4] Re-opening the sutures generally resulted in satisfactory cosmetic results, if early surgical treatment was accomplished, and especially in dealing with the most common pattern of suture fusion, sagittal craniosynostosis. There have been many procedures described to improve the cosmetic results of children with premature suture fusion, attesting to the fact that universally pleasing results have not been obtained.[1,6] Many adjuncts have been used to assure that the suture would remain open. Among these are the application of sclerosing agents to the dura; however, adverse affects on the underlying brain occurred. Silastic membranes folded around the open bone grooves have also been used but, even with these, frequent re-operation has been necessary. Most failures have been attributed to delay in surgical treatment.[5]

More recently, procedures have been designed to deal more effectively with the specific cosmetic deformities associated with each type of suture fusion. In addition, attention has been paid to bio-mechanical forces which play a role in the subsequent molding of the skull. With these newer surgical approaches, some immediate correction of deformities can be expected, and some improvement can be offered even to children whose lesion has not been treated as early as is generally recommended.

The evaluation of a patient suspected of having craniosynostosis relies on an appreciation of the abnormal configuration of the head, sometimes with palpable suture ridges, and any associated anomalies. Radiographs of the skull are generally diagnostic in showing early suture fusion. Children with unilateral or bilateral coronal synostosis may have as high as a 30 to 60% incidence of associated anomalies. A significant number of patients with premature fusion of the coronal suture may have Crouzon's disease or Apert's syndrome.

Three entities are worthy of comment from the standpoint of differential diagnosis. Frequently, premature babies, nursed for long periods of time with the head turned to each side, will have an apparent anterio-posterior elongation of the cranium, suggesting craniosynostosis. Babies who have laid on their backs for long periods of time, with the head fixed to one side or the other, may have flattening of the occipital squamae, suggesting premature fusion of the lambdoid sutures. Finally, microcephaly must be distinguished from premature fusion of all cranial sutures, oxycephaly. An important feature in the differentiation lies in the fact that it is quite rare for all sutures to symmetrically close at the same time. An asymmetric or irregularly deformed head is the rule with the very rare cases of true oxycephaly, whereas microcephalic infants have a small, but symmetrical cranium. Skull x-rays will show the sutures to be open in microcephaly, and CT scanning will show a small brain with an adequate subarachnoid space. (Figure 1)

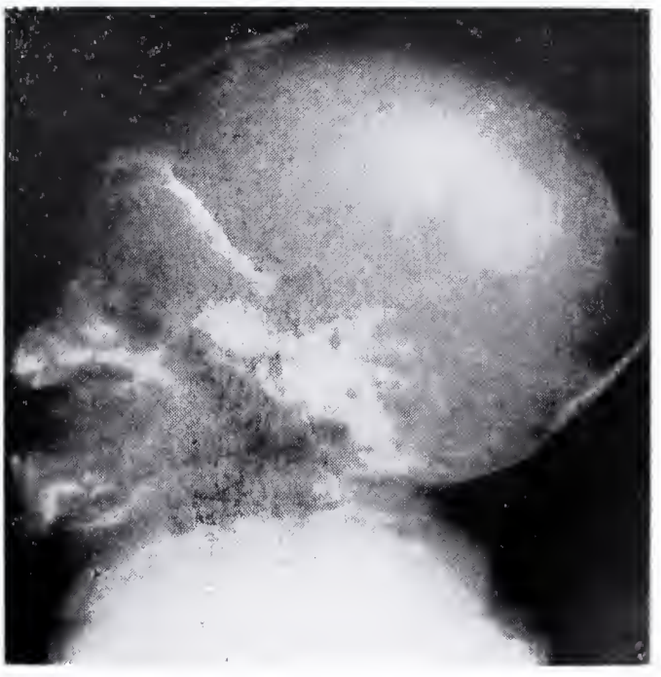


Figure 1. A.
Lateral skull radiograph of child with microcephaly shows the typical appearance and open suture lines.

*Department of Neurosurgery, Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Arkansas 72202.

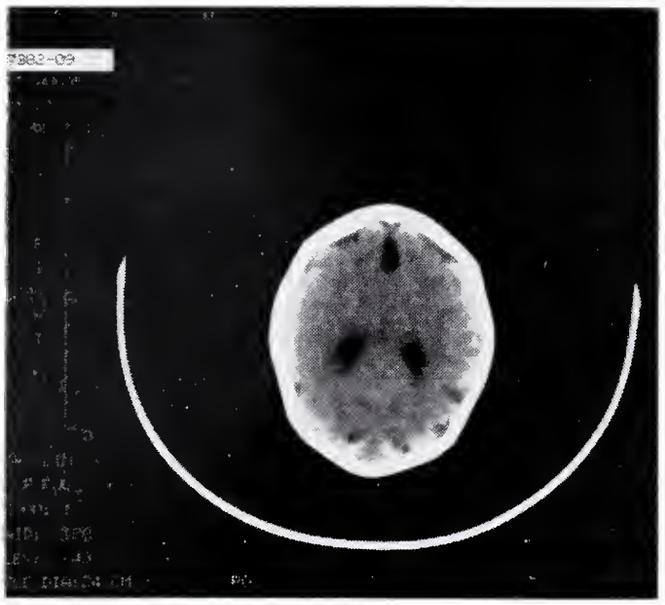


Figure 1. B.

CT scan of same patient shows the symmetrical configuration of the skull, the small brain, and generous subarachnoid and ventricular compartments.



Figure 1. C.

CT scan of same patient with bone settings shows all sutures to be open.

Sagittal Craniosynostosis is the most frequent form of premature suture fusion. Characteristically, the child has an increased antero-posterior dimension with a keel appearance of the head (scaphocephaly). (Figure 2) Often, prominent bossing of the frontal or occipital region occurs as a result of compensatory overgrowth in either or both directions. Other anomalies are not often seen with sagittal synostosis and, certainly, the indication for surgical treatment is almost invariably cosmetic. Surgery should be done as early as possible to obtain the best cosmetic result. Within the first few months of life, simple suturectomy or parasagittal craniectomies usually provide satis-

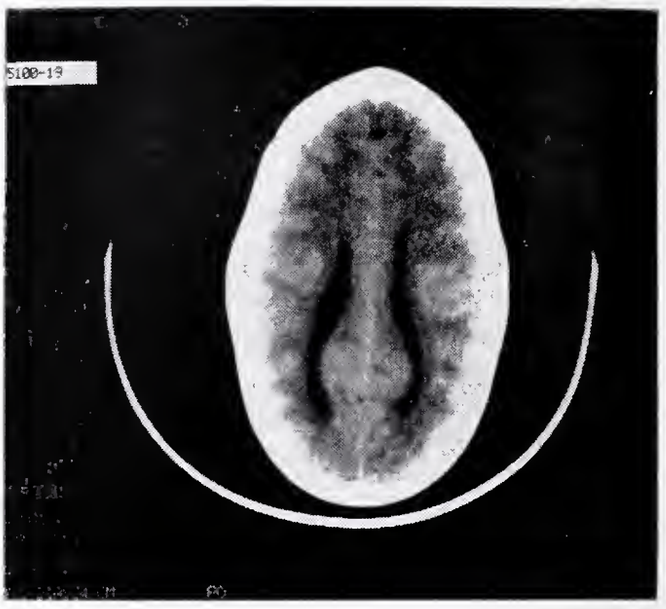


Figure 2.

CT scan of the head of a child having sagittal craniosynostosis shows the antero-posterior elongation of the skull. The brain and ventricular system conform to the shape of the skull and are otherwise normal.

factory results; however, after about six months of age or even in younger children, if significant compensatory overgrowth has occurred, more extensive procedures are recommended. Based on studies by Jane and associates,[3] newer operations have included the so-called "pi" procedure. Frontal and parasagittal bone strips, conforming to the shape of the Greek letter "pi", are excised. The midline parietal bone strips are then separated from the sagittal sinus and approximated to the frontal bone with fine wires. The procedure immediately foreshortens the head 8-10 mm., and has the bio-mechanical effect of spreading the parietal bones, not only correcting the keel appearance, but also preventing refusion. (Figure 3) Modifications of the "pi" procedure (Figure 4), allow specific correction of the variants having prominent occipital (reverse "pi") or frontal bossing.[7]

Coronal Synostosis. Premature closure of the coronal sutures results in a very short anterior-posterior diameter of the skull (brachycephaly), associated with broadening in the biparietal direction. Procedures to widely open the coronal suture completely disengaging the frontal bones from the orbital region and temporal regions generally provide a satisfactory cosmetic result when done early and when the synostosis is bilateral. Morcellation and dural re-attachment of the frontal bones is also helpful (Figure 5). However, when unilateral synostosis of coronal suture is seen, it is very frequently associated with a



Figure 3. A.

Preoperative skull x-ray, antero-posterior view, shows the narrow interparietal distance characteristic of sagittal craniosynostosis.

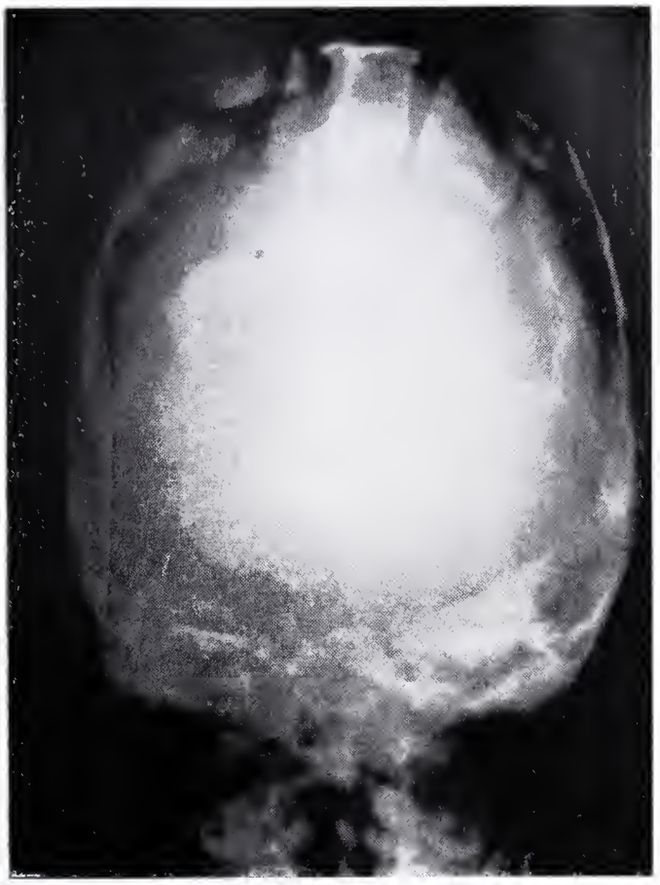


Figure 3. B.

Immediate postoperative skull x-ray shows the widened interparietal parietal distance and bone replacement.



Figure 4.

Lateral view of skull radiograph made after a reverse "pi" procedure had been done for sagittal craniosynostosis with prominent occipital bossing.

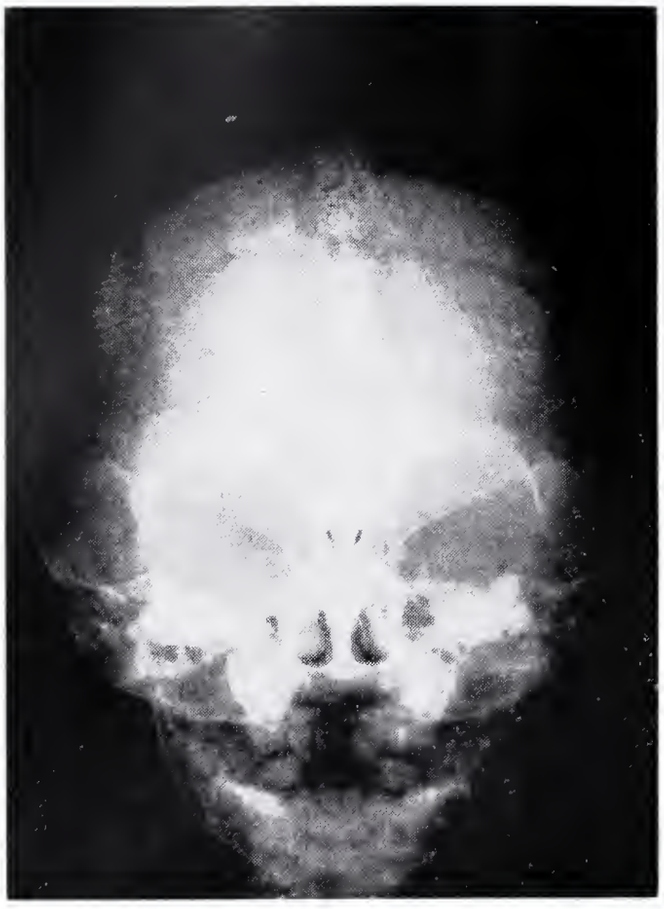


Figure 5.

Antero-posterior view of a radiograph made postoperatively in a patient treated for bilateral coronal synostosis. Morcellation and dural re-attachment of the frontal bone fragments has been done.

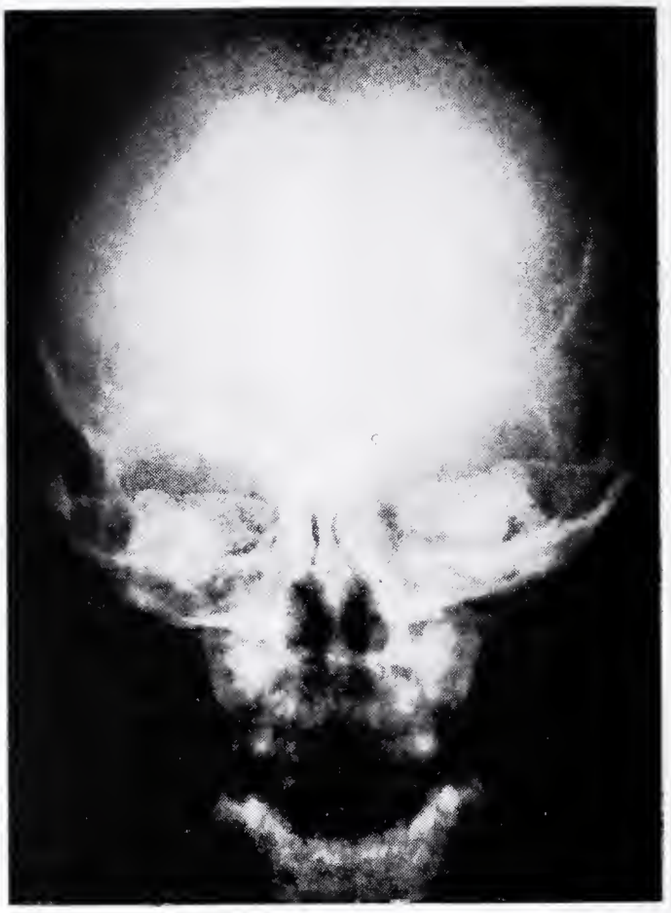


Figure 6.

Antero-posterior view of the skull x-ray of a patient with a harlequin eye. A canthal advancement operation is most desirable for such patients having unilateral coronal synostosis.

flattening of the ipsilateral orbit and the radiographic appearance of a harlequin eye (Figure 6). In these cases, it is essential to cut through the roof of the orbit and orbital rim, to free it up across the midline, and advance the orbital rim by means of a bone strut interposed between the parietal bone and the orbital rim. This canthal advancement operation generally results in great improvement in the cosmetic appearance of the child and is far superior to simple excision of the fused coronal suture.[2] When hypertelorism is present, the inter-orbital defect is corrected at the same time.

Lambdoid synostosis also results in a foreshortening of the anterior-posterior dimension of the skull, but also shows marked flattening of the occipital bone with a pointed parietal-occipital junction. In these cases, wide excision of the lambdoid suture results in a satisfactory cosmetic improvement, again as long as early surgical correction is undertaken.

Metopic Synostosis or Trigonocephaly is characterized by a pointed forehead and has associated anomalies which require more extensive surgery than simple suturectomy. The frequently associated hypotelorism should be treated by mobilization of the orbital rim medially down to the nasion, and remodeled using strut grafts from the adjacent calvarial bone. The entire frontal bone is also remodeled to achieve its more nearly normal rounded appearance.

Some of the less common synostoses such as oxycephaly or turricephaly require major reconstructive attempts—not only to alleviate the restrictive component of brain growth, but also to deal with some unique configurations and refusion problems. Frequently, repeated surgery is necessary for these patients.

SUMMARY

Newer, often considerably more extensive surgical procedures for the correction of craniosynostosis have improved the outlook for children having these cranial deformities. Excellent anesthetic techniques, surgical adjuncts such as electrocoagulating scalpels, and careful attention to blood replacement in these tiny citizens, has made the morbidity of surgical treatment quite acceptable, and there should be no mortality associated with surgical treatment. Again, however, better results are obtained when the diagnosis is

made early and surgical treatment accomplished promptly.

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ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG shows sinus rhythm with no evidence of heort block. In II, III, ond AVF, he hos deep, wide Q-woves ond T-wove inversion without ST elevotion which suggests inferior infarction of unknown age but probably not acute infarction. However, the ST segments from V_2 through V_6 are morkedly elevoted withaut any T-wave changes, o pottern also seen in I and AVL. These changes suggest onterior and loterol infarction, acute. Other choices, such as voriont angino or possibly pericarditis or myocorditis, exist but one should consider the chonges to be those of acute inforction for purposes of initial theropy. One could speculote thot the inferior infarct took place one week prior to odmission. The feature editor wishes to thank Dr. Johnson of Conwoy, Arkansas, for his help with this month's ECG.

Surgical Overview:

Management of Colorectal Cancer Metastatic to the Liver

J. Michael Stair, M.D.,* and J. Ralph Broadwater, M.D.**

Cancer metastatic to the liver has been regarded by most physicians as an ominous event. Indeed, metastatic disease to the liver is often the component of the malignant process that leads directly to death. Of the estimated 110,000 new cases of colorectal cancer per year in the United States, 20% will develop liver metastasis. With a problem of such magnitude, it behooves the physician to consider palliative or curative therapy. However, prior to the institution of therapy, the physician must consider several points: the natural history of the disease, the therapy available and its efficacy, and which patients would benefit from therapy.

NATURAL HISTORY OF COLORECTAL CANCER METASTATIC TO THE LIVER

The natural history of colorectal cancer metastatic to the liver depends largely upon the degree of liver involvement, i.e., solitary or widespread metastases. Jaffe reports a mean survival of 5 months in untreated patients with all stages of liver metastases from colon cancer.[1] Wood, however, found that patients with an untreated solitary metastasis had a 60% 1-year survival and a mean survival of 16.7 months. With untreated widespread disease of the liver, Wood noted a 5.7% 1 year survival and a mean survival of 3.1 months.[2] Most cases of liver metastasis from colorectal cancer are discovered at the time of diagnosis, at the time of resection of the primary tumor, or within 2 years following resection.

*Pulaski Surgery Clinic, 2007 Fendley Drive, North Little Rock, Arkansas 72114.
**Department of Surgery, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.
Address reprints to Dr. Stair.

DIAGNOSIS OF LIVER METASTASIS

A variety of tests are available for the detection of liver metastasis. Unfortunately, no single test is 100% sensitive and accurate. Therefore, the clinician must develop a rational and efficient approach to the diagnosis of liver metastasis.

Of the biochemical tests of liver function, the alkaline phosphatase, serum bilirubin, and serum glutamic-oxaloacetic transaminase are most commonly used to aid in the detection of liver metastasis.[3] The alkaline phosphatase is the most useful of these and is abnormal in approximately 85% of patients with metastatic disease of the liver. Other biochemical tests such as the leucine aminopeptidase, 5′ nucleotidase, and gamma-glutamyl transpeptidase may also be useful to help determine whether an elevated serum alkaline phosphatase level is due to bone or to liver disease.

Radionuclide scanning utilizing technectium^{99} sulphur colloid is very helpful in the detection of liver metastasis. The liver scan is most sensitive when the lesion is greater than 2-3 cm. in diameter. Most lesions of this size produce an elevation of the alkaline phosphatase. Therefore, liver scanning should not be routine in the absence of biochemical abnormalities, except as a baseline test for future comparison. The liver scan has the advantages of being relatively inexpensive, non-invasive, easy to perform and has a relatively low incidence of false negative results.

Ultrasonography is more specific than liver scan, but is somewhat less sensitive for the detection of liver metastasis according to most studies. It, too, is non-invasive, easy to perform, inexpensive and has a resolution of 2-3 cm. Ultrasound is

a quite helpful adjunct when the liver scan is equivocal and may be used in this situation to distinguish hepatic lesions from normal variants.

Computerized tomography (CT) may also be useful for the detection of liver metastasis. It usually defines the anatomy better than either liver scan or ultrasound and, in many studies, may have a resolution of 1-2 cm. Drawbacks to CT scanning are the cost of the test and exposure to radiation.

Evaluation of liver scan, ultrasound and computerized tomography for liver metastasis seems to indicate that these tests are complementary in that each test supplies information not available from the others.[4,5] Each test also has limitations. Liver scan is frequently equivocal for lesions at the porta hepatis. Ultrasound is inadequate to visualize the lateral-most portion of the right hepatic lobe underneath the ribs. Artifacts and loss of resolution due to respiratory motion has been a problem with computerized tomography in the past, but may not be as much of a problem with the newer generation fast CT scanners.

Sugarbaker, et al.,[6] have compared liver scan, ultrasound and CT in a prospective fashion for the detection of metastatic disease to the liver. They found that the accuracy of either test was approximately 80%. Liver scan and CT were 76% and 79% sensitive, respectively, and the sensitivity of ultrasound was 61%; however, these differences were not statistically significant. A combination of the three modalities did not improve the accuracy. Also of note was that when correlated with surgical findings all three techniques were unable to detect lesions less than 3 cm. in diameter.

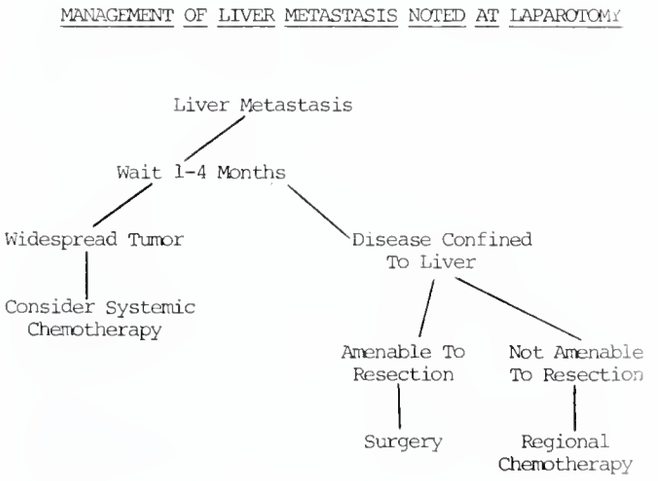
At present, the liver scan is the best radiologic test to use for screening due to low cost, ease of performance, sensitivity, and low incidence of false negative tests. A liver scan should be obtained at baseline and again in followup if laboratory parameters suggest metastasis to the liver. Equivocal liver scans should be supplemented with ultrasound or computerized tomography to determine the presence or absence of disease.

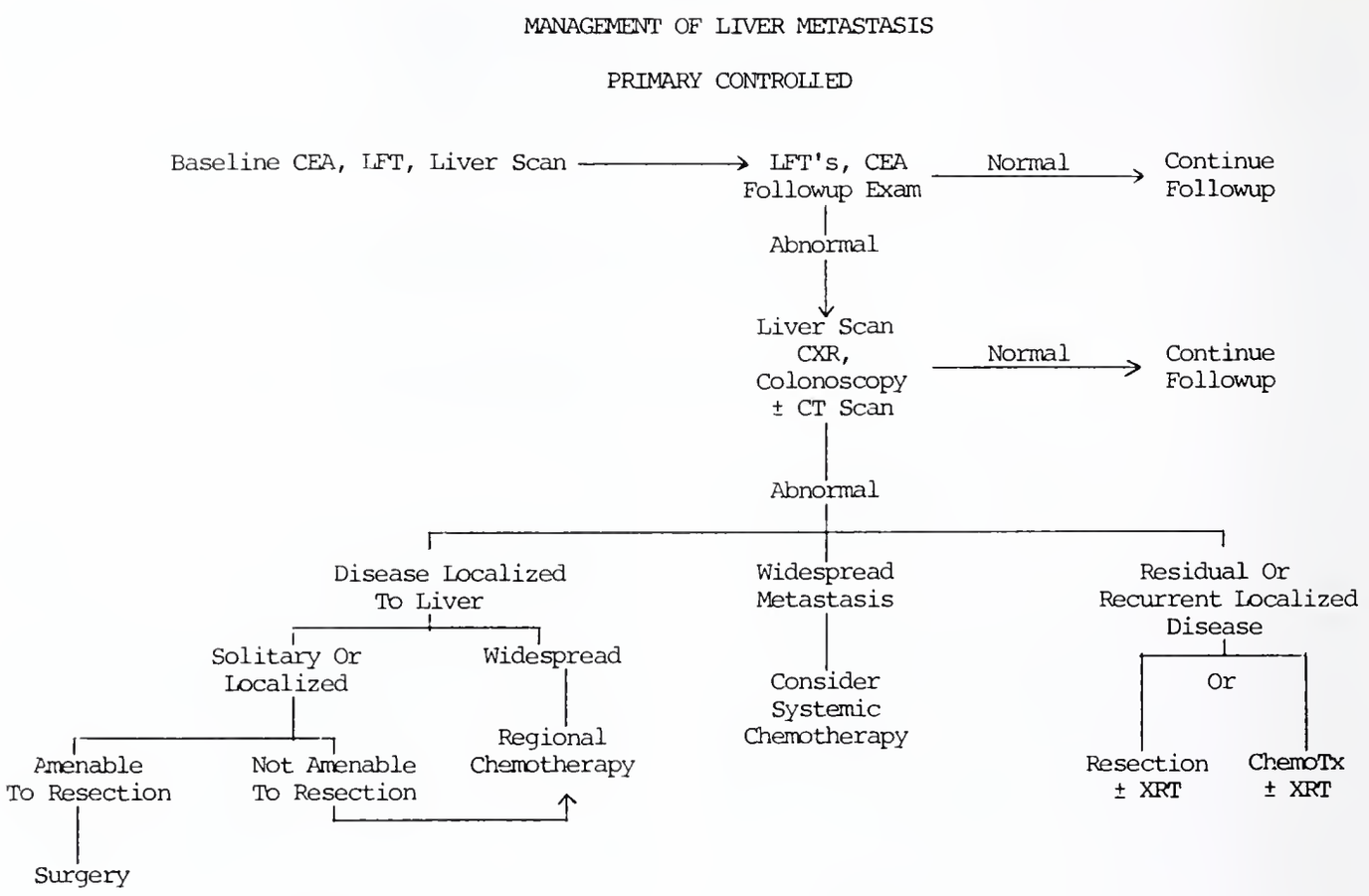
Carcinoembryonic antigen (CEA) has become a very helpful tool in the detection of metastatic or recurrent colorectal cancer. The CEA level may be elevated in patients who smoke and, therefore, false positive results are not uncommon. When the CEA level exceeds 9 ng/ml, the false positive rate is roughly 5%. However, false negatives can be as high as 45%, which limits the usefulness of CEA as the sole test in the diagnosis of liver metastasis. It is as an adjunctive test that CEA has its greatest potential. Results by McCarty and Hoffer revealed that all of the patients in their series with a CEA level exceeding 9 ng/ml and a positive liver scan had metastasis proven at surgery, and only 1% of those in whom both tests were negative subsequently had proven metastatic lesions.[7]

It must be emphasized that none of these tests are diagnostic by themselves and that none are as accurate as tissue viewed under the microscope. These tests may lead to a decision to perform liver biopsy, laparoscopy or laparotomy. The presence and degree of liver metastasis is most accurately determined by bimanual palpation of the liver. Therefore, costly and time-consuming diagnostic studies should be avoided unless they contribute directly to a decision against laparotomy or aid the planning of laparotomy.

AVAILABLE THERAPY

Once the diagnosis of metastatic liver disease is made, palliative or curative therapy should be considered. Available palliative measures include noncurative resection, radiotherapy, regional or systemic chemotherapy, interruption of tumor blood supply or any combination of these. Curative therapy is limited to surgical resection as there is no evidence of permanent or long-term cure with the other modalities.





RADIOTHERAPY

The major drawback of radiotherapy for liver metastasis is the sensitivity of the liver to radiation. In the series reported by Ingold, et al., greater than 50% of patients exposed to over 3,500 rads to the liver developed radiation hepatitis.[8] From this and other information, most investigators feel that whole liver irradiation tolerance is up to 3,000 rads at 150-180 rads/fraction. Most metastatic lesions are not sensitive to less than 3,000 rads, but some patients will have symptomatic benefit from external radiation.

Combining radiation with regional chemotherapy has yielded better results than with radiation alone.[9-11] Experience with radiation therapy in combination with intrahepatic 5-FUdR has shown a 44% response rate and a median survival of 13 months vs. 4.5 months in non-responders.[9]

VESSEL OCCLUSION

Hepatic artery ligation or embolization has a sound theoretical basis in that most hepatic tumors receive their nourishment from hepatic artery branches. It can be done safely in the absence of cirrhosis or portal vein thrombosis. Although dramatic tumor shrinkage has occurred early, followup angiography generally shows rapid development of collateral channels and regrowth of tumor that parallels this increase in circulation.[12,13] In summary, vessel occlusion has not been shown to be of any clear, lasting benefit.

CHEMOTHERAPY

It is still difficult to define the role of chemotherapy for metastatic colon cancer even after two decades of extensive experience. Trials with 5-FU given I.V. show a 15-20% response rate; however, a consistently demonstrable, statistically significant increase in survival has not been shown.[14] More recent studies utilizing 5-FU plus methyl-CCNU show promise, but it is too soon to tell if this regimen should become the standard of therapy.

REGIONAL CHEMOTHERAPY

Regional chemotherapy consists of placement of chemotherapeutic agents directly into the hepatic artery. In the past, this most commonly was accomplished by placement of a silastic catheter into the gastroduodenal artery and threading the catheter into the hepatic artery. The catheter was then brought to the outside and connected to an infusion pump which the patient wore by means of a strap. This method has disadvantages

over systemic chemotherapy in that the pump is uncomfortable to wear, laparotomy is required to place the catheter, and infection or thrombosis of the catheter can occur. However, this method has distinct advantages over systemic chemotherapy in that, in addition to decreasing hospitalization time to receive chemotherapy and lessening systemic toxicity of chemotherapy, the overall response rate with hepatic artery infusion is 60-80% as compared to 15-20% for systemic chemotherapy.[10,12,14,15]

Recently this method has been improved considerably with the advent of a totally implantable infusion pump. Marketed by the Infusaid Corporation, the new pump does not require external power support. The principle behind the pump is that it is composed of two chambers separated by a metal bellows. While one chamber acts as a reservoir for the drug to be infused, the second chamber is the power supply containing a two-phase charging fluid in a liquid vapor equilibrium. The vapor pressure of the charging liquid exerts pressure on the reservoir chamber, infusing the drug at a fixed rate. When the chamber is refilled, this exerts a pressure on the charging fluid causing the fluid vapor to condense to its liquid state, thereby storing energy for the next cycle and completely eliminating the need for batteries. This pump has also been used for regional chemotherapy for liver tumors other than metastatic colon cancer, to deliver chemotherapy for other primary tumors such as sarcomas and head and neck cancers, and for delivery of insulin and heparin over prolonged periods.[10,14-16]

The pump uses a silastic catheter placed into the gastroduodenal artery which is threaded into the hepatic artery. The pump itself is then placed into a subcutaneous pocket and sutured directly to the rectus muscle fascia to prevent slippage. The pump holds 50 ml. of fluid and delivers up to 3 ml/day, requiring bi-weekly filling. Refilling of the pump may be done as an outpatient and is accomplished percutaneously. The pump does have a second injection port so that one drug may be used if the patient is on a multi-drug protocol.

CURATIVE THERAPY

Surgical Resection

At present, surgical resection of hepatic metastasis is the best chance for cure. It is estimated that 20% of patients with colon cancer have metastasis to the liver and that one-fourth of these patients are amenable to resection. This accounts for 5% of the population of patients with colon cancer. Wilson and Adson reported a 42% 5-year survival and a 28% 10-year survival after resection of solitary liver metastasis from colon cancer.[17] However, review of several collected series of resection for solitary and multiple liver metastasis shows a 2-year survival of 51%, a 5-year survival of 24% and an average survival of 31 months.[17-20]

Resection may entail wedge resection, segmentectomy, lobectomy or trisegmentectomy (extended lobectomy). Resection is best reserved for patients who have solitary or localized liver deposits as their only manifestation of recurrent or metastatic disease. If these guidelines are followed, reasonable results with an operative mortality of approximately 5% can be expected. In general, if hepatic metastasis is noted at initial laparotomy for control of the primary tumor, liver resection should be delayed. This allows for preparation of patient and surgeon for the possibility of a major liver resection. A delay of 1-4 months seems reasonable to allow for a search for other sites of metastasis and to allow rapidly growing, aggressive tumors to express themselves. If spread or rapid growth is not apparent and the patient's general condition permits it, then liver resection should be recommended as the only hope for permanent cure.

If liver metastasis becomes apparent after control of the primary tumor, a search for recurrent, residual or other metastatic disease should be undertaken. This includes colonoscopy and, if the primary was located in the rectum or low colon, computerized tomography of the pelvis. A chest x-ray and chest tomography, if applicable, should be performed. Brain and bone scans may be obtained if history, physical exam or laboratory results suggest metastatic disease in these locations. Hepatic arteriography should be routinely obtained if the above studies indicate that the patient is a candidate for liver resection. Arteriography delineates the blood supply to the liver which may be aberrant as often as 20% of the time.

In summary, baseline liver scan, liver function tests and CEA level should be obtained at the time of primary resection. Liver function tests and a CEA level should be obtained at each follow-up period. Should either of these tests be abnormal, a search for metastatic or recurrent disease is indicated and a liver scan, chest x-ray and colon-

oscopy should be performed. If liver metastasis seems to be the only focus of disease, biopsy confirmation is the next step. If the patient is a candidate for liver resection, this should follow arteriography. If the patient is not amenable to liver resection because of concurrent medical condition or extent of liver involvement, hepatic artery infusion of 5-FUdR utilizing the Infusaid implantable pump should be considered.

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Cardiovascular Rounds

Feature Editor: James E. Doherty, M.D.*

Pericardial Effusion With Pulmonary and Cutaneous Manifestations

Moderator: Robert A. Lambert, M.D.*

Discussants: Bruce Murphy, M.D., Joseph A. Franciosa, M.D., Love Seth, M.D., Paul Baxley, M.D., Gary Lane, M.D., Bimlendra Sharma, M.D., and Steve Hutchins, M.D.*

Dr. Lambert: Our case is that of a lady with known pericardial disease who presents with recurrent dyspnea, edema, and skin lesions. Dr. Bruce Murphy will present this case.

Dr. Murphy: The patient is a 65-year-old white female who presented to the family practice service because of shortness of breath, leg swelling, and generalized malaise. She had been hospitalized 10 months earlier for similar symptoms, and at that time an echocardiogram showed a large pericardial effusion. She was sent home on digoxin and lasix. Her past history included ethanol abuse, hypocalcemia and hypomagnesemia which was thought to be secondary to ethanol. Her systems review was negative except for cold intolerance.

On physical examination, the blood pressure was 110/80 mm Hg with a 12 mm Hg pulse paradox; she had prominent venous pulsations in her neck with an estimated CVP of 10 cm. H_2O. There were diffuse crackles in all lobes of her lungs, and she had a pleural rub heard on both sides of the chest anteriorly. The cardiac examination revealed a very prominent pulmonic sound without murmurs or gallops. She had hyperpigmented legs with 2+ pitting edema. Examination of the skin revealed telangiectasia and pitting in the tips of her fingers. The skin was also indurated and very wrinkled. A chest x-ray, (Figure 1) showed diffuse interstitial infiltrates with massive cardiomegaly, consistent with pericardial effusion.



Figure 1.
Chest x-ray on admission. Note massive cardiomegaly and bilateral interstitial lung infiltrates.

Dr. Lambert: Does anyone wish to point out anything else on the chest x-ray.

Dr. Franciosa: Is the right hemi-diaphragm elevated?

*All participants, Department of Cardiology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.
Address for correspondence and reprints: Bruce Murphy, M.D., University of Arkansas for Medical Sciences, 4301 West Markham, Slot 532, Little Rock, Arkansas 72205.

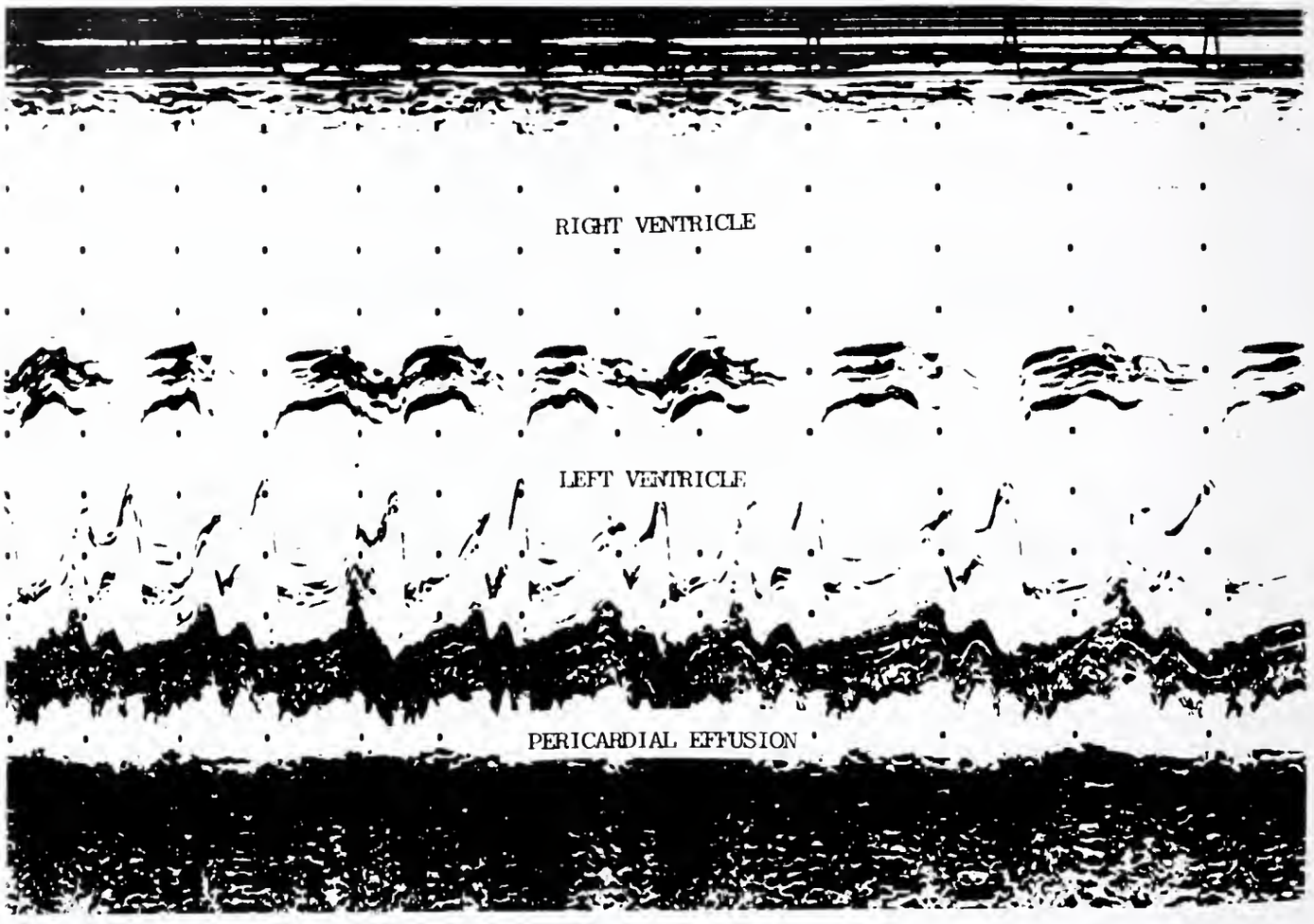


Figure 2.
M-mode Echocardiogram showing right ventricular dilation with normal left ventricular chamber size and wall motion. Pericardial effusion is evident.

Dr. Murphy: I think there may be an effusion there, but it does look high.

Dr. Franciosa: This may be worth commenting upon further. Elevation of the right hemidiaphragm has been said to be a sign of heart failure and attributed to hepatic enlargement. However, another explanation is that the left hemidiaphragm is depressed because the heart is big. I don't know which, if either, of these explanations is correct. How would you differentiate pulmonary edema from infiltrates in the lung?

Dr. Murphy: In this case it is difficult, but the chronic nature of the interstitial infiltrates and perhaps the honeycombing in the left lower lobe would suggest a primary pulmonary process.

Dr. Franciosa: The infiltrates do extend diffusely to the periphery rather than being redistributed predominantly to the upper lobes as in heart failure. I agree it is difficult to distinguish.

Dr. Murphy: Her electrocardiogram showed sinus tachycardia with low voltage and diffuse nonspecific T-wave changes. We were asked to see this patient about the possibility of cardiac tamponade. Although her massive cardiomegaly and pulsus paradoxus were consistent with tamponade, dyspnea appeared to be chronic, and the differentiation between pulmonary and cardiovascular disease was not readily apparent. An echocardiogram showed a dilated right ventricle and a large pericardial effusion (figure 2). The left ventricle was not dilated and appeared to contract normally.

Dr. Seth: The two dimensional echocardiogram showed the left ventricle to be of normal size and there is a large pericardial effusion. The remainder of the study was normal except for the enlarged right ventricle. The echocardiographic signs of tamponade can include compression of the right ventricle and right atrial wall in early diastole. These signs are not present.

Dr. Lambert: Are there any further questions about this patient's presentation and initial evaluation? If not, Dr. Murphy will proceed to tell us about the patient's hospital course.

Dr. Murphy: The patient was given furosemide which resulted in a reduction of her edema, but worsening of her shortness of breath. We recommended that she have a heart catheterization to look for a constrictive process or cardiac tamponade. The hemodynamic date (Table 1) revealed that the right atrium, right ventricle, and left ventricle all had similarly high diastolic pressures. We were unable to obtain a pulmonary capillary wedge pressure. She did have fairly striking pulmonary hypertension, probably accounting for her dilated right ventricle. The diastolic pressures are very similar except, of course, in the pulmonary artery.

TABLE 1
INTRACARDIAC PRESSURES DURING CARDIAC CATHETERIZATION

	Pressure (mm Hg)
Right Atrium — Mean	16
Right Ventricle — Systolic	84
End-Diastolic	18
Pulmonary Artery — Systolic	83
Diastolic	42
Left Ventricle — Systolic	156
End-Diastolic	16

Dr. Baxley: I don't think those pressures are diagnostic of tamponade.

Dr. Lane: I agree, those pressures do not indicate diastolic equilibration.

Dr. Franciosa: The hemodynamic data indicate something else is wrong in the pulmonary circulation. If the mitral valve is normal, then from the left ventricle all the way back to the pulmonary artery it is an open system in diastole and pulmonary arterial diastolic and left ventricular end-diastolic pressures should be within 4 mm Hg of each other. This patient's data suggest primary lung disease as the cause of abnormal pulmonary arterial and right heart pressures.

Dr. Sharma: In a patient with a pulmonary problem who goes into tamponade with pulmonary hypertension you could see higher diastolic pressures in the pulmonary artery.

Dr. Franciosa: Well, you would, but that is very rare. It is more likely that in this case right ventricular and left ventricular end-diastolic pressures are similarly elevated, but they are increased due to different causes.

Dr. Lane: You could explain her right sided pressures on the basis of pulmonary arterial hypertension alone with high right atrial pressures.

Dr. Hutchins: Does the high pulmonary arterial pressure exclude the possibility of tamponade.

Dr. Sharma: If this patient had pulmonary hypertension for a long time and developed tamponade, she would still have pulmonary hypertension.

Dr. Murphy: I think an answer to Dr. Hutchins' questions is, if there is just one process occurring, then those pressures in the pulmonary artery are inconsistent with tamponade.

Dr. Hutchins: Why couldn't this all be just pulmonary hypertension?

Dr. Franciosa: Primarily because there is elevated end-diastolic pressure on the left side. It is possible, though, that this could be secondary to elevated right ventricular pressure with the interventricular septum moving paradoxically and restricting left ventricular filling.

Dr. Hutchins: What did her left ventricular end-diastolic pressure measure?

Dr. Murphy: 15 mm Hg.

Dr. Lane: The big thing that bothers me is the elevation of right ventricular systolic pressure which is not supposed to happen in tamponade.

Dr. Murphy: The question now is would you do a pericardiocentesis?

Dr. Franciosa: I think with these hemodynamics we have to do something to change the pericardial pressure and see what happens to the other pressures.

Dr. Hutchins: I thought it should be done, not as a therapeutic tap, but for diagnosis.

Dr. Murphy: Pericardiocentesis was done in the catheterization laboratory. The catheter in the right atrium and the pericardiocentesis catheter were connected to pressure. We found a right atrial pressure of 12 mm Hg and intrapericardial pressure of 9 mm Hg. This procedure was done a day after the previous catheterization. She had received diuretics and her right atrial pressure was lower.

Dr. Sharma: So what would you expect, Dr. Lane, if this were tamponade?

Dr. Lane: Well, right atrial and intrapericardial pressure should be equal or there should be no more than 1 mm Hg difference. Also, if this were tamponade, then for diuresis to lower the right atrial pressure from 16 to 12 would be unusual.

Dr. Baxley: Do those pressures rule out tamponade?

Dr. Sharma: I think that the pericardial pressure is higher than normal.

Dr. Franciosa: We know that she has a pericardial effusion; the question is, are the elevated pressures due to tamponade? Relative changes in right heart and pericardial pressures after fluid removal would be helpful as right ventricular pressure should fall with pericardial pressure as tamponade is relieved.

Dr. Murphy: A pigtail catheter was placed in the pericardial sac and 300 cc of bloody fluid were removed. The right atrial pressure remained at 12 mmHg and the pericardial pressure fell to 1 mm Hg. I would like to review the chemistry of the pericardial fluid. The glucose was 35mg/%, the protein was 835/mgdL, the red cell count was 500,000/uL and the white blood cell count was 600/uL. Additionally, the anti-nuclear antigen of the pericardial fluid was 1:40. Her serum anti-nuclear antigen was 1:160. A positive ANA in pericardial fluid has been reported with scleroderma. She was chemically euthyroid. Rheumatology consultants agreed that she had scleroderma which was likely the cause of her pulmonary and pericardial disease. We felt that she had pulmonary hypertension secondary to scleroderma lung disease. It was also our feeling that the pericardial effusion was due to scleroderma and of trivial hemodynamic significance. In scleroderma, heart involvement is frequent and second only to renal failure as a factor affecting survival. Cardiovascular manifestations of this disease include pericarditis, congestive heart failure, ventricular arrhythmia, conduction abnormalities, and sudden death.[2-4] Pathological examination usually shows a microvascular vasculitis and contraction band necrosis.

This patient later developed a respiratory acidosis which was relentless and resulted in cardiac arrest and death. An autopsy was performed and revealed severe pulmonary fibrosis, severe right ventricular hypertrophy, micronodular cirrhosis and patchy contraction band necrosis within the myocardium which is consistent with scleroderma.

Dr. Lambert: I want to thank Dr. Murphy and all the discussants for reviewing this interesting case of scleroderma with cardiopulmonary involvement.

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Update on Intrapartum Fetal Assessment

Frank C. Miller, M.D.,* and Julie H. West, RNC, BSN**

INTRODUCTION

Electronic fetal heart rate (FHR) monitoring has had an immense impact on the discipline of obstetrics over the past twenty years. The techniques for intrapartum electronics have become an integral part of fetal evaluation and obstetrical care. Heightened awareness of the potential hazards of labor upon the fetus and the need for improved methods of fetal surveillance have accelerated the acceptance of this technique.

In many instances, the acceptance and utilization of FHR monitoring have preceded general knowledge and understanding of the instrumentation required, or of the pathophysiology of FHR patterns, or both. In these situations, it is not surprising that misinterpretation of the data and inappropriate action may result.

HISTORICAL

From 1822, when auscultation was first used by Kergaradec to assess the fetus, to today's world of second generation fetal monitors and tissue pH equipment, the technologic evolution of fetal heart rate monitoring has indeed been a slow process. The evolution of our utilization and understanding of electronic fetal monitoring (EFM) as a useful tool for clinical management has been slower still.

The first proposal that the fetal heart rate might be used to diagnose fetal distress was not formulated until 1848, when Kilian[1] suggested that heart rates below 100, above 180, those that lost purity of tone, and those with distinct intermissions were indications for immediate delivery by forceps. In 1893, Von Winckel described criteria for the diagnosis of fetal distress which remained essentially unchanged until the arrival of EFM and fetal scalp sampling.

For years, the FHR was dutifully auscultated for 30 seconds after the end of a uterine contraction. Serious doubt was cast on the usefulness of this method as an indicator of fetal well-being by the results of the Collaborative Study of Cerebral Palsy, Mental Retardation and other Neurological Disease in 1968. Benson and associates,[2] while evaluating 24,863 deliveries, demonstrated that there was no correlation between the FHR (as determined by auscultation) and neonatal condition, except in the most extreme circumstances. With these doubts raised about the utility of auscultation and the age of electronic technology fast making its impact on modern medicine, it was inevitable that obstetrical research would turn to more sophisticated methods of fetal evaluation.

Ten years before Benson published the results of the collaborative project, Hon[3] reported the continuous recording of the FHR via a fetal EKG monitor from the maternal abdomen, and began to elucidate the causes of fetal bradycardia.[4] In the years that followed, Hon, Caldeyro-Barcia in Uruguay, Hammacher in Germany, and others[5-7] reported various FHR patterns associated with fetal distress. With many investigators throughout the world making similar observations, FHR terminology became extremely confusing. An international conference was held in 1972 to establish nomenclature and develop standards for FHR monitoring.

Much of the subsequent history has been one of technologic development for the clinical application of FHR monitoring. The development by Hon in 1972, of a convenient disposable spiral electrode, made internal monitoring available to every clinician in the country.[8]

The second generation of EFM with auto correlation and wide-beam ultrasound has improved external monitoring capabilities and reduced the recording of false variability. Dual heart rate monitoring, automated data entry and remote monitoring are other technologic improvements over the first generation of monitors. The remaining challenge is the appropriate application of the available technology to offer an even greater

*Professor and Chairman, Department of Obstetrics and Gynecology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.
**Perinatal Outreach Nurse, Department of Obstetrics and Gynecology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.

margin of safety to the fetus. Closing the gap between technology and applicability can be accomplished through continuing education, and should be given high priority in the coming years.

INSTRUMENTATION

In order for the clinician to accurately interpret fetal monitor tracings, it is necessary that they have some understanding of the processes involved in the acquisition and processing of fetal heart rate and uterine activity data.

Monitoring of the Fetal Heart Rate

The FHR monitor precisely calculates intervals between fetal heart beats in milliseconds. Each interval is converted to a rate as though every FHR interval were the same for one minute, i.e., an interval of 500 milliseconds equals a rate of 120 beats per minute (60,000 milliseconds/500 milliseconds = 120 BPM). The rate is recalculated after each beat.

The direct (internal) system involves placement of a stainless steel spiral electrode into the subcutaneous tissue of the presenting fetal part after membranes are ruptured. The second pole of the bipolar electrode is in contact with the maternal vaginal fluid and hence the mother. The two leads from the electrode are then connected to a ground plate fixed to the maternal thigh. The peak of the fetal R-wave is used to trigger the cardiotachometer. This direct system allows for precise measurement of instantaneous heart rate variability, both short and long term.[9]

The most common instrument for external monitoring of the fetal heart rate is the Doppler ultrasound transducer. This system sends out continuous ultrasound energy and then detects the shift of the sound as it is reflected from the moving heart structure. The mechanical motion that provides the signal may vary from cycle to cycle; for example, a fetal heart valve motion may provide one trigger and a septum motion the next. Thus, the system does not provide clinically useful information about beat-to-beat variability. The signal can also be affected by changes in the position of the transducer or the fetus.

Monitoring of Uterine Activity

In the direct (internal) system, an intrauterine catheter is utilized to directly monitor intrauterine pressure. This fluid-filled plastic catheter is placed through the cervix into the uterine cavity and is then connected to a pressure sensitive strain gauge. The intrauterine pressure during contractions is transmitted through the fluid-filled catheter to the strain gauge where the pressure is measured in millimeters of mercury. The system allows for precise measurement of intrauterine resting tone which is helpful in evaluating states of altered uterine contractility, such as abruptio placentae or overstimulation with Pitocin. The system can be adversely affected by vernix or meconium plugging the catheter, or by air bubbles in the system. The level of the strain gauge in relation to the catheter tip will also artificially increase or decrease the pressure reading.

In 1947, Murphy and Reynolds[10] both described a system for externally monitoring uterine activity, and modifications of these systems are in use today. The technique for monitoring uterine activity involves placement of a tocodynamometer on the maternal abdomen in the region of the uterine fundus. The forward rotation of the uterus with a contraction depresses a pressure sensitive button on the tocodynamometer and produces an electrical sign reflecting uterine activity. This system provides accurate information on the frequency and duration of contractions, but does not accurately reflect intensity of contractions or uterine resting tone.

BASIC PATTERN RECOGNITION

Knowledge of fetal heart rate patterns and their causative mechanisms allows for possible amelioration through conservative management and for timely intervention when conservative measures fail. The following ACOG guidelines for standardization of FHR terminology are those now generally accepted.[11]

I. Baseline FHR
 A. FHR level
 1. Marked bradycardia 99 bpm or less
 2. Mild bradycardia 100-110 bpm
 3. Normal baseline rate 120-160 bpm
 4. Mild tachycardia 161-181 bpm
 5. Marked tachycardia 181 or more bpm
 B. FHR variability
 1. Short term
 2. Long term

II. Periodic FHR
 A. No change
 B. Acceleration
 C. Decelerations
 1. Uniform
 a. early
 b. late
 2. Variable

Baseline Fetal Heart Rate

Baseline fetal heart rate is determined during the intervals between uterine contractions or other significant events, such as fetal movement or vaginal exam. The normal range is from 120-160 beats per minute. Changes of the fetal heart rate lasting longer than 10 minutes are considered baseline changes rather than periodic changes.

Baseline Tachycardia

Tachycardia represents stimulation of the sympathetic nervous system and is defined as a baseline rate in excess of 160 BPM that lasts more than 10 minutes. Generally, progressive tachycardia is considered an early sign of fetal distress (Figure 1, Bottom), but other possible causes must be considered. Maternal-fetal fever and infection are common etiologies. Parasympathetic blocking drugs, such as atropine and scopolamine, and sympathomimetic drugs, such as isoxuprine and ritodrine, will also cause tachycardia. Less commonly, it can be due to fetal blood loss, fetal arrhythmia or maternal hyperthyroidism.

Baseline Bradycardia

Heart rates of less than 120 BPM are called bradycardias. A baseline heart rate between 100-120 BPM that maintains good variability is nearly always benign (Figure 1, Top). A bradycardia preceded by decelerations and associated with a loss of variability usually reflects fetal hypoxia or acidosis.[12] Baseline fetal heart rates of less than 70 BPM without variability may also represent complete heart block which is associated with a high degree of congenital heart disease.

Baseline Variability

The single most important fetal heart rate characteristic in predicting the status of the fetus at any given point is heart rate variability. It represents normal neurologic modulation and cardiac responsiveness. Periodic FHR patterns reflect the stress mechanism of the insult upon the fetus, i.e., cord compression, while variability is a measure of fetal reserve.

There are two components of fetal heart rate variability, short-term and long-term. Short-term,

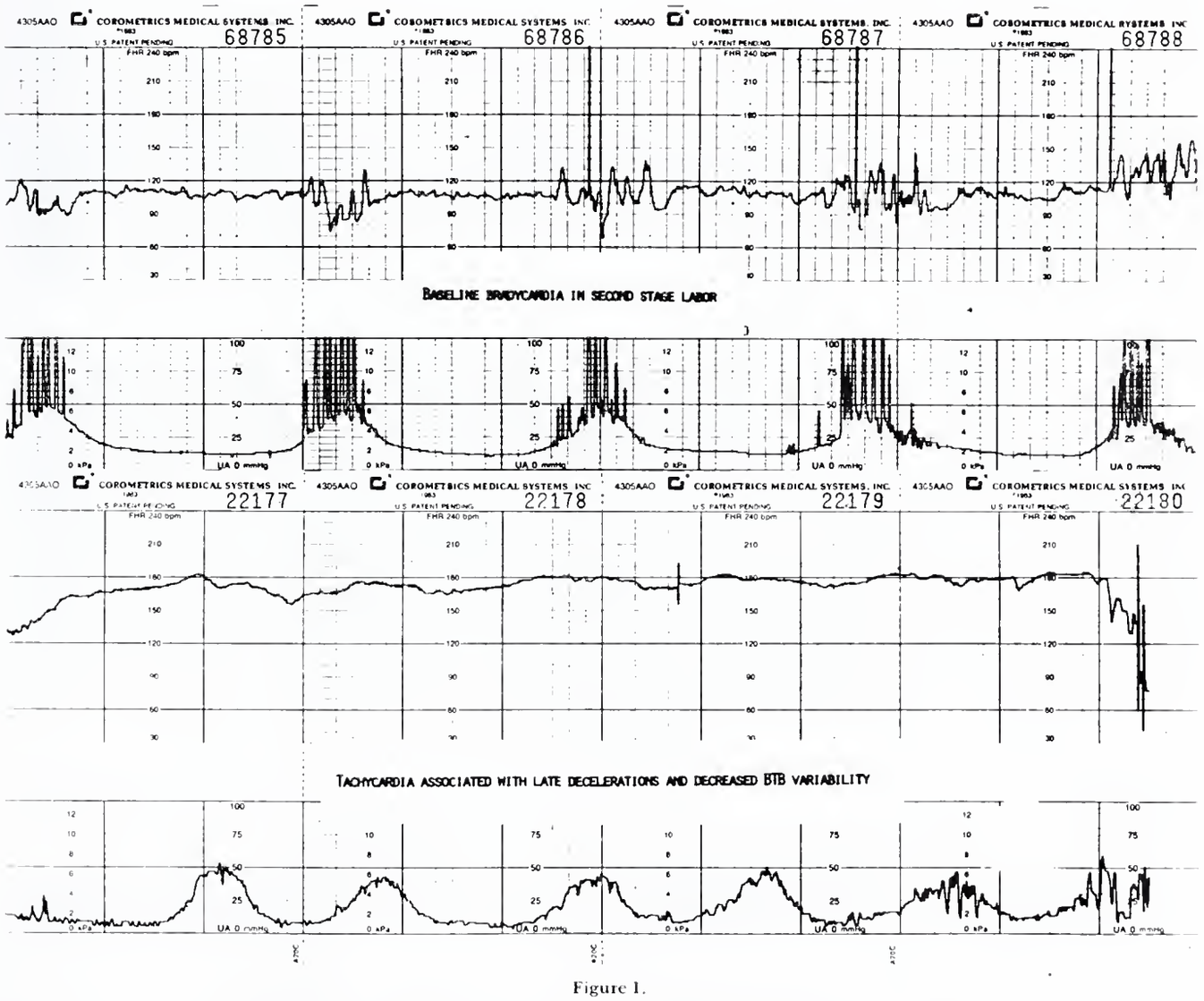


Figure 1.
Top—Baseline bradycardia. Bottom—Baseline tachycardia with decreased variability.

or beat-to-beat variability is a consequence of the "push-pull" effect of the sympathetic and parasympathetic nervous systems. It is the instantaneous change in the FHR resulting from differences in the R-R interval from one consecutive QRS complex to the next. Long-term variability is the waviness of the baseline tracing and has a frequency of 3-5 cycles per minute. The two types of variability generally increase and decrease in concert.

Normal variability has been shown to predict a good neonatal outcome.[13] Subsequent investigations have demonstrated positive correlation among FHR variability, normal neurologic function and Apgar score (Figure 2, Top).

Increased variability (saltatory patterns) has recently been shown to be an early sign of mild hypoxia, but is usually associated with a normal fetal pH. It can also be seen with tactile stimulation during a vaginal exam or other event.[15]

Decreased variability is seen with anything which causes central nervous system depression. Fetal hypoxia or asphyxia is the most worrisome cause, but patterns of fetal "sleep" cycles and certain medications can also have an effect. Analgesics, tranquilizers, narcotics, anesthetics and parasympathetics are drugs commonly associated with decreased variability (Figure 2, Bottom).

In the presence of non-reassuring heart rate patterns, such as persistent late decelerations, the loss of variability is associated with a high incidence of fetal acidosis and low Agpar scores.[16] A most difficult pattern to interpret is the persistently flat baseline (absent variability) seen in the fetus with a normal heart rate level and no decelerations. This may represent a previous insult to the fetus that has been corrected but has caused neurological damage. It may also be seen in fetuses with significant congenital anomalies, especially of the central nervous or cardiac systems, or in extreme prematurity.

Periodic Fetal Heart Rate

Periodic changes in the fetal heart rate are defined as transient changes above and below the

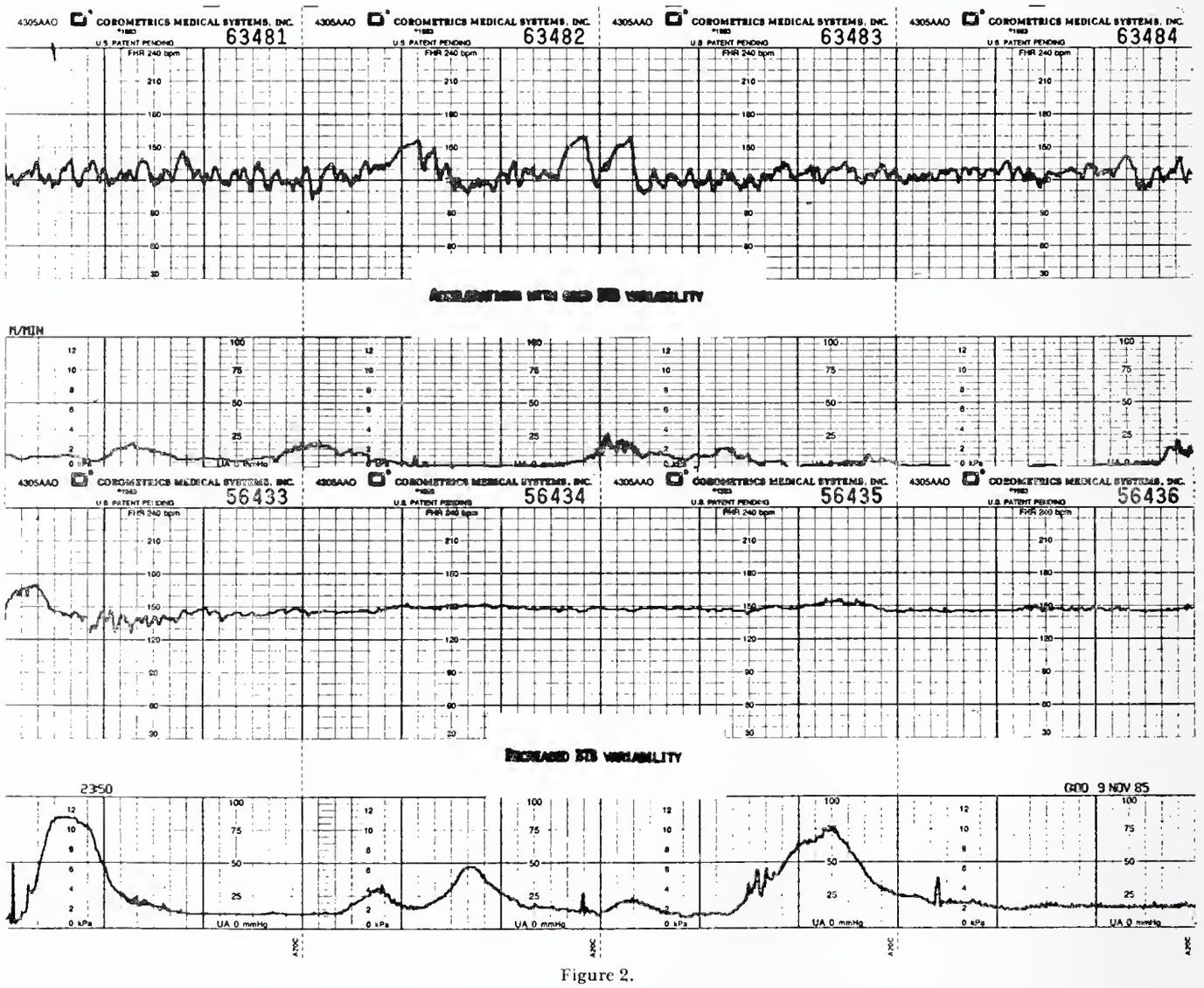


Figure 2.
Top—Average long and short-term variability. Bottom—Decreased variability.

baseline, usually seen with contractions or other significant events.

Accelerations

Accelerations of the fetal heart rate above baseline are common during the antepartum period and are usually associated with fetal movements. Accelerations temporarily reassure the clinician of the well-being of the fetus, and are the basis for a reactive non-stress test.

During the early intrapartum period, accelerations are sometimes seen with uterine contractions and are generally considered to be innocuous. The frequent progression of this pattern to variable decelerations supports the theory of partial umbilical cord compression as the causative mechanism (Figure 3, Top).

Early Decelerations

Early decelerations are uniformly shaped decelerations that begin early in the uterine contraction cycle, have their nadir at the peak of the contraction, and return to baseline with the end of the contraction (Figure 3, Bottom). These changes are caused by fetal head compression and the altered cerebral blood flow causes cardiac slowing through a vagal reflex. The degree of slowing is generally proportional to the strength of the contraction but rarely falls more than 20-30 BPM below baseline. Early decelerations are not associated with loss of variability or other heart rate changes, and are not associated with fetal hypoxia, acidosis or low Apgar scores.

Late Decelerations

In shape and uniformity, late decelerations are similar to early decelerations, but the timing relative to the contraction is delayed. The onset is usually seen 20-30 seconds or more after the onset of the contraction, and the return of baseline usually occurs well after the contraction is over. Late decelerations are often subtle with the heart rate falling no more than 10-30 BPM below baseline. Occasionally, the most depressed fetuses will have only shallow (5-10 BPM) late decelerations, and therefore this pattern must never be considered as innocuous, regardless of the

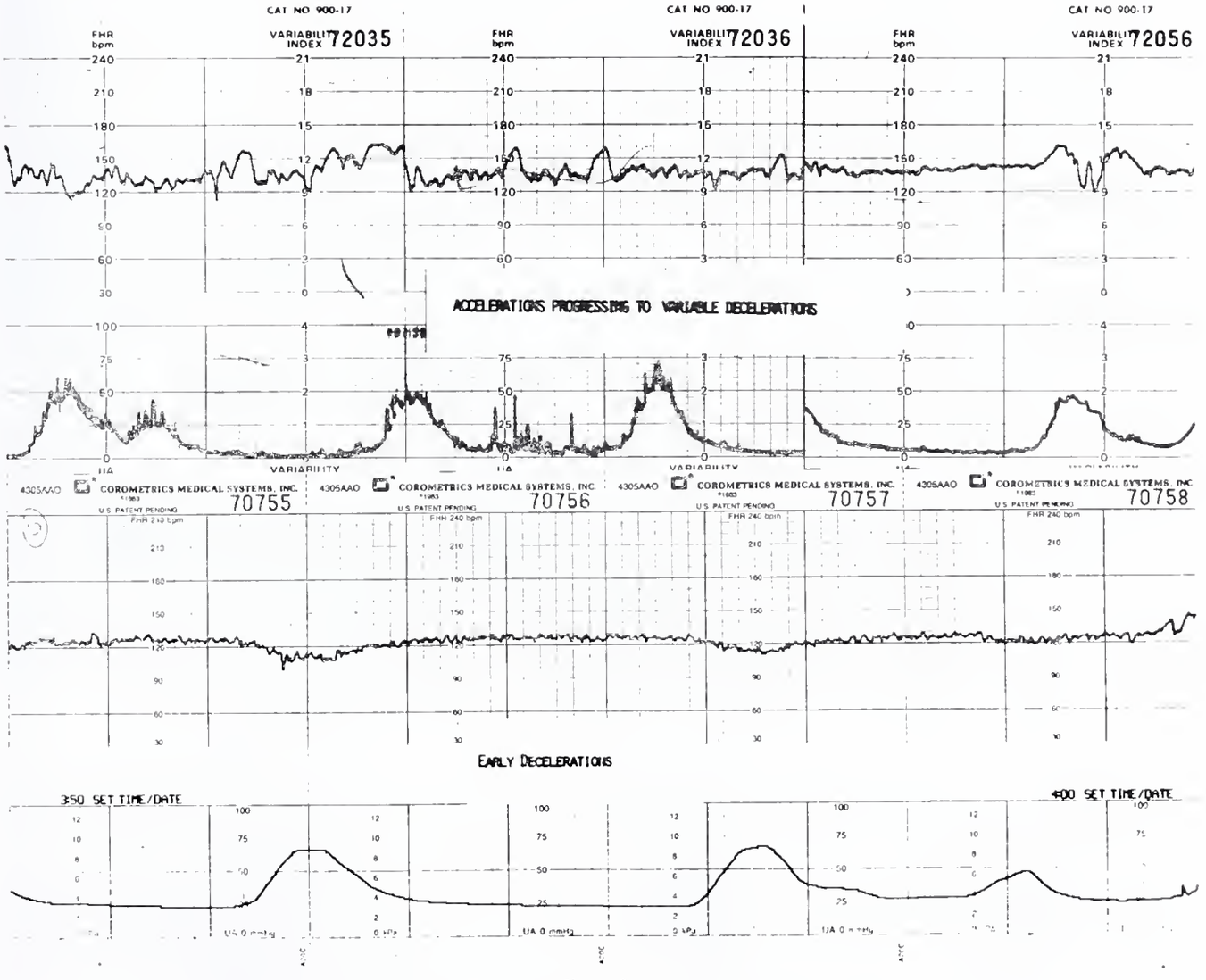


Figure 3.
Top—Accelerations progressing to variable decelerations. Bottom—Early decelerations.

magnitude.[16]

Late decelerations are caused by uteroplacental insufficiency elicited by intervillous stasis which occurs during uterine contractions. The lag time between the onset of the contraction and the onset of the deceleration is probably related to the transit time of poorly oxygenated blood from the placenta to the central circulation of the fetus.

Late decelerations with good variability are seen in situations where the fetus is healthy but is undergoing an acute stress. Examples are uterine hyperactivity with excessive oxytocin stimulation and maternal hypotension following epidural anesthesia. In these cases, the fetus will recover easily if treatment is promptly instituted.

At the other extreme is the fetus who has been compromised prior to labor by inadequate perfusion and placental pathology. This is seen more often in pregnancies affected by problems such as hypertension, preeclampsia, postmaturity, diabetes and collagen vascular disease. The stress of labor may further aggravate maternal-fetal exchange and produce late decelerations.

Under these conditions, the decelerations are repetitive and persist despite interventions. The development of fetal tachycardia and loss of variability are important signs of developing metabolic acidosis and correlate highly with neonatal depression [17] (Figure 4).

Variable Decelerations

The most frequently seen fetal heart rate deceleration pattern is the variable deceleration. This aptly named pattern is variable in its duration, intensity and relationship to the contraction (Figure 5, Top). Variable decelerations are caused by intermittent cord compression that usually occurs with uterine contractions, especially in the second stage of labor. The two mechanisms that produce the deceleration are a rapid onset, vagally mediated reflex and a slower hypoxic response. Compression of the cord acts to occlude the low pressure umbilical-placental circulation, resulting in fetal hypertension which stimulates baroreceptors to produce FHR deceleration. Acute hypoxe-

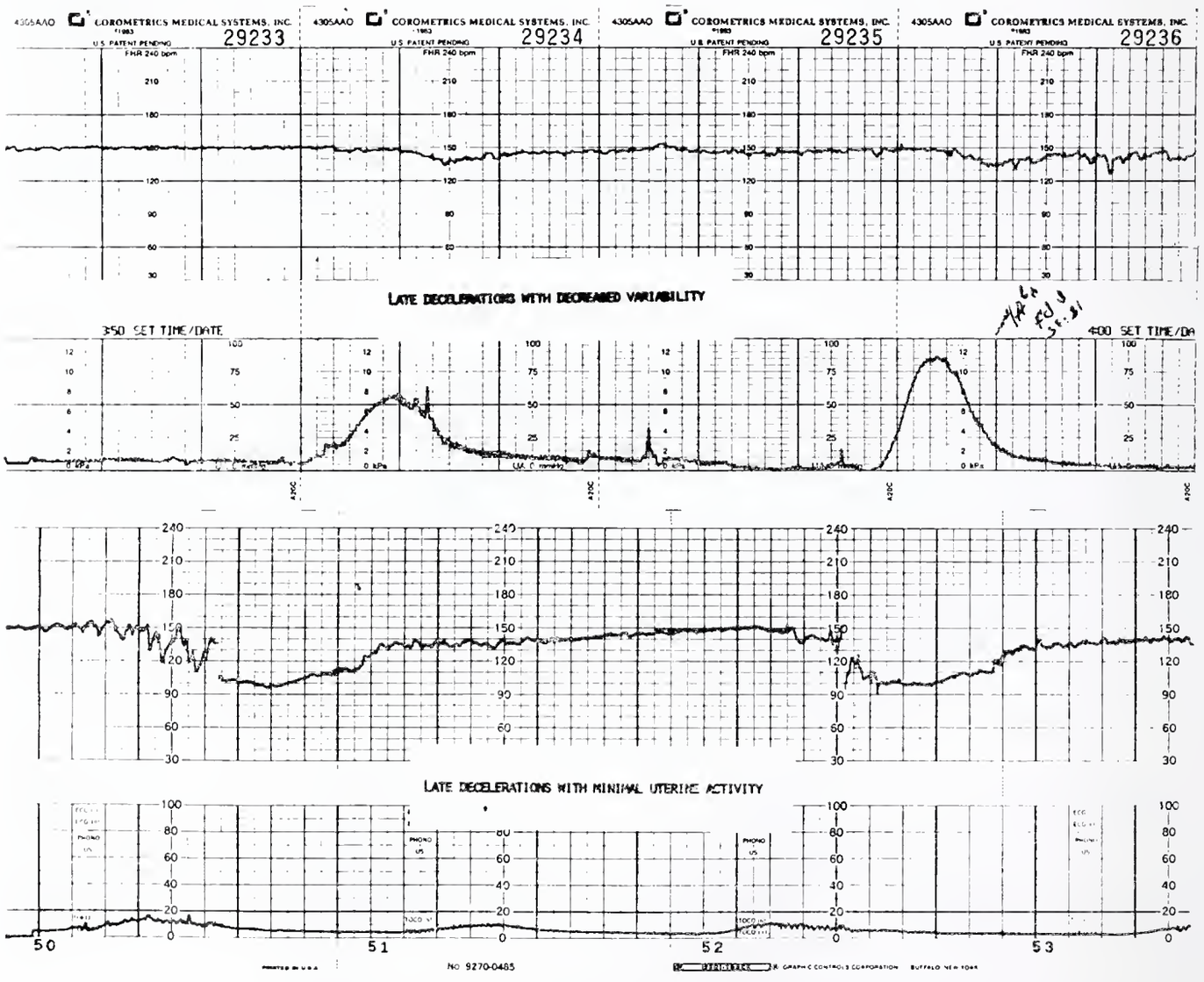


Figure 4.
Top—Subtle late decelerations. Bottom—Late decelerations with minimal uterine activity.

mia also acts via chemoreceptors to enhance the FHR deceleration.

In terms of fetal compromise, the insult will vary directly with the duration and degree of cord compression. If placental function is normal and uterine activity is not excessive, only a mild respiratory acidosis may develop which will rapidly resolve with abatement of the compression. Should the cord compression be prolonged or repetitive, a progressive fetal hypoxia and resultant metabolic acidosis may develop. It is important to evaluate other parameters between the decelerations such as loss of variability and baseline tachycardia which may herald progressive hypoxia and acidosis[18] (Figure 5, Bottom). In 1983, Krebs[19] reported that pure variable decelerations seen with good variability and a normal baseline rate are probably innocuous. However, certain atypical features such as loss of variability during the deceleration and continuation of the baseline at a lower rate reflect significant fetal hypoxia and may be associated with a depressed infant at birth.

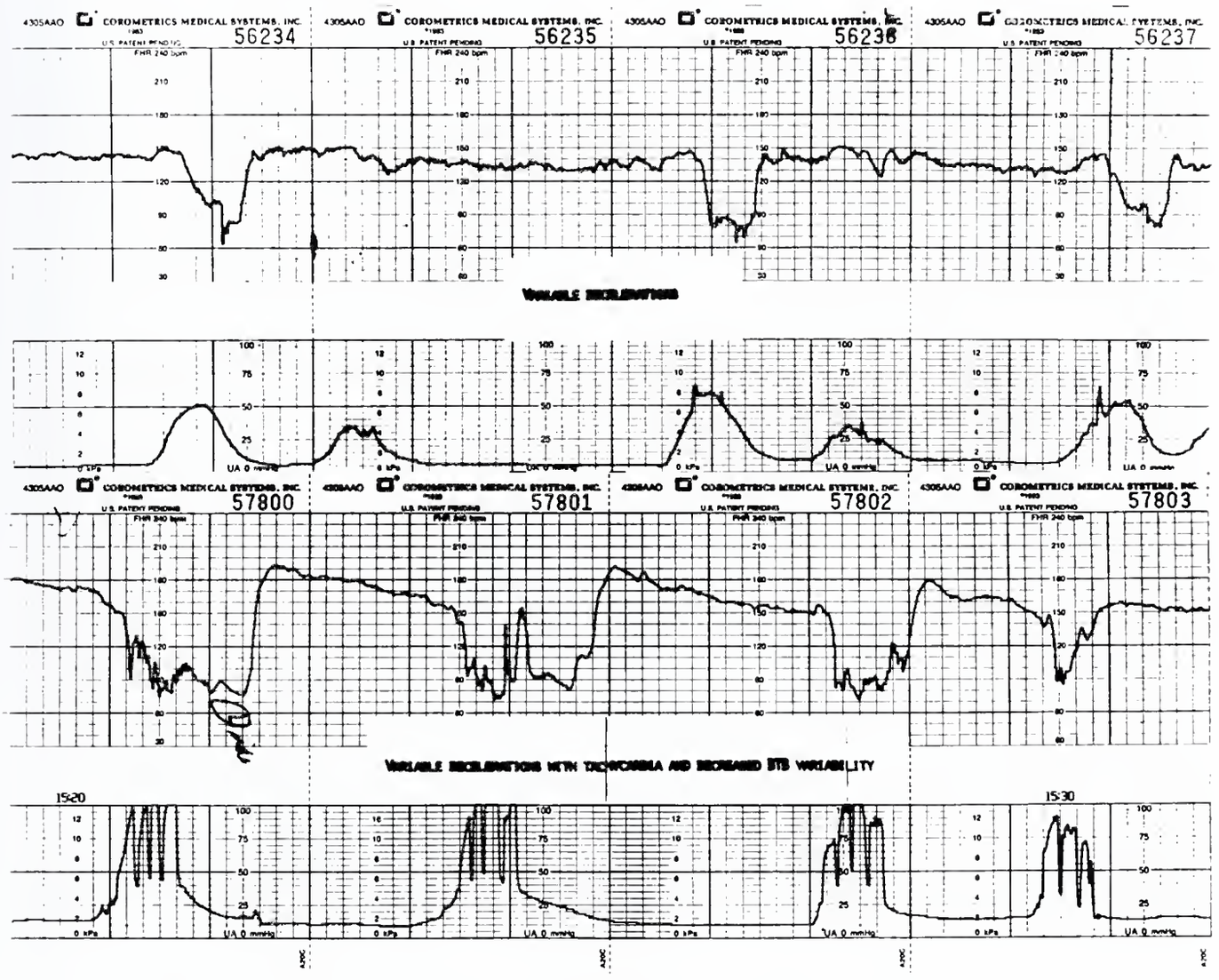


Figure 5.
Top—Pure variable decelerations. Bottom—Variable decelerations with decreased variability and tachycardia.

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EDITORIAL

Red and Blue

Alfred Kahn, Jr., M.D.

Several interesting reviews have been published on blood cells in recent months. A review entitled "Neurologic Dysfunction in the Idiopathic Hypereosinophilic Syndrome" was written by Moore, Harley and Fauci (Annuals of Internal Medicine, Volume 102, Page 109, January, 1985).

Eosinophilia is seen as a manifestation of a number of disorders, the most common of which is allergy. It is also seen in congenital disorders, parasitic disorders, with pemphigus, periarteritis nodosa, Hodgkin's disease and in other conditions. Eosinophilia may be idiopathic, and that is the topic under discussion by Moore and her colleagues. They limited their study to patients with eosinophilia without any known cause who had had the condition for at least six months. One of the requirements to fit their group was that the case must develop end-organ injury. The organs which may suffer in this disorder include: the lungs, pulmonary tree, liver, spleen, skin, nervous system, kidneys, gastrointestinal tract, lymph nodes, eyes and muscles. In this review, the authors have extensively studied the neurologic effects of so-called idiopathic hypereosinophilic syndrome. It is rather surprising to read in their review that eosinophils produced of eosinophilia are said to be injurious to the nervous system. A toxin has been extracted from eosinophils which can produce nerve injury, and eosinophils can be injected directly into the nervous system and produce injury. The authors studied 52 patients who fulfilled the three tenets of the hypereosinophilic syndrome—namely, no known cause for the eosinophilia, persistence of eosinophilia beyond six months and end-organ damage.

Sixty-five percent of their fifty-two patients (34 cases) had neurologic abnormalities. They state that the abnormalities were not apparently caused by any other disorder.

They divided their case study into those cases with central nervous system dysfunction and those having peripheral neuropathy. In seven of the cases, there was evidence of primary central nervous system disorder which they state had a distinctive pattern in five patients, and the changes which they quote are: behavorial changes, confusion, memory loss, ataxia and prominent upper motor neuron signs; two of their cases had seizure activity. The authors have published an excellent chart with the signs and symptoms found in their patients, the laboratory findings and the causes. It is of interest that in those cases having an encephalopathy attributed to the hypereosinophilic syndrome, CT scans of the brain showed definite, permanent findings in two and transient findings in a third; apparently, a scan was not done in a fourth. In the fifth case, the CT scan was entirely normal. They reported improvement in all five of these cases, although it was incomplete in three of the five.

Twenty-seven of the fifty-two cases with hypereosinophilic syndrome had a peripheral neuropathy, the majority of which were characterized as polyneuropathy, but they also had vasculitis, asymmetrical sensory loss, monomodality sensory loss, distal atrophy, mononeuritis multiplex and radiculopathy. The diagnoses fairly well explain the symptom complex of the patient. It is of interest that the cases having vasculitis did not have vasculitis of the vaso nervorum. The authors report that the physical findings seem to be more conclusive in making a diagnosis than the laboratory tests. EMG's were normal in multiple cases, although there were some individuals who had abnormal EMG's. The ultimate prognosis of patients with polyneuropathy due to the hypereosinophilic syndrome were described as "variable". There was often a persistent sensory loss for a period of years.

Apparently, one of the interesting complications of hypereosinophilic syndrome is that of thromboemboli. Moore, et al., state that this is common. Six of her patients are said to have had focal central nervous system dysfunction; she attributed this to vascular accidents. It is not clear that the hypereosinophilic syndrome was the sole cause of the thromboemboli in all cases, as there were other possible causes in some of the cases. She treated the cases with anticoagulants and states that despite this, some cases had recurrent thromboembolism.

One especially interesting statement made by the authors is that the laboratory studies were examined in the various types of end-organ damage in cases of hypereosinophilic syndrome, and there was no good correlation between the laboratory studies and the neurologic involvement—that is, the level of eosinophilia, etc. Even muscle biopsies showed varying results which were not helpful from a diagnostic point of view.

In the discussion, the authors relate that encephalopathy was most troublesome and tended to appear early in the course of the hypereosinophilic syndrome. When it did occur, it tended to be very debilitating. Also, the severe cases of polyneuropathy tended to appear early in the course of the disease. They relate that there were four cases who had both encephalopathy and sensory polyneuropathy. Also discussed by them was the fact that stroke and transient ischemic attacks secondary to thromboemboli were not a rare occurrence; some of these patients had endocardial fibrosis.

The authors did not have any very explicit forms of therapy for the hypereosinophilic syndrome. Anticoagulants were used and recommended. They used adrenal steroids with what appears to have been success in some of their cases. In their concluding paragraph, the authors state that the neurologic disorders associated with hypereosinophilic syndrome tend to improve spontaneously; however, many patients have some residual effects.

Cells containing basophilic granules have been of interest to the hematologist and internist. Frieri, Alling and Metcalfe have published an interesting article on systemic mastocytosis entitled, "Comparison of the Therapeutic Efficacy of Cromolyn Sodium with That of Combined Chlorpheniramine and Cimetidine in Systemic Mastocytosis" (American Journal of Medicine, Volume 78, Page 9, January, 1985).

Systemic mastocytosis is not a common disease, and its cause is totally unknown. The authors characterize it as a disorder in which large numbers of mast cells can be found in both the internal organs and the skin; they relate that the symptoms include itching, allergic skin reactions such as urticaria, bone pain and gastrointestinal symptomatology including diarrhea—these things are the result of chemical mediators, quoting the authors.

Frieri, et al., do not recommend any treatment which is specific for this disease; their recommendations include "stabilizing the mast cell membrane using cromolyn sodium or blocking the effects of histamine using the H_1 histamine antagonist, chlorpheniramine, and the H_2 histamine antagonist, cimetidine." They tried various forms of treatment and tracked the patients by studying their symptoms and by measuring the histamine content of the blood and urine.

They studied eight patients using a double-blind technique. Two patients were not able to be followed completely. Of the original eight patients, it is interesting that they report seven patients had skin lesions, six patients had hepatosplenomegaly, six patients had high mast cell counts on bone marrow aspiration; they used bone scanning techniques and found that seven patients had an abnormal test.

The thrust of this study was to determine if cromolyn sodium or the antihistamines were clearly more beneficial than the other, either by measuring the symptoms or the amount of histamine in body fluids. Ultimately, they could not prove that cromolyn sodium was any better symptomatically than the antihistamines, and neither drug reduced the levels of histamine. From looking at the authors' charts and article, it seems apparent that cromolyn sodium and antihistamines are of benefit symptomatically—but the benefit is limited.

They state that side effects were present with the drugs which they used, but they did not seem to be of a severe degree. They state, in their discussion, that cromolyn sodium seems to alleviate bone pain, whereas, the antihistamines tended to relieve the skin symptoms.

The number of articles on blood cells in the general internal medical literature is limited, and the above articles should be of interest to the general physician and to the general internist.

"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

Journal of the Arkansas Medical Society
Vol. 6 No. 11 May, 1896 p. 560
Evening Session, April 29

Arkansas Medical Society called to order at 8:30 p.m. by President L. P. Gibson. Dr. Eberle announced a reception at the residence of Mrs. E. R. DuVal, and extended an invitation to all members of the society.

Hon. J. D. Bryant was then introduced by Dr. Eberle and delivered the address of welcome on behalf of the citizens of Fort Smith. The society showed its appreciation of the speaker's eloquence by the closest attention. Dr. W. B. Welch, of Fayetteville, responded in behalf of the society, in a very happy speech.

The president then delivered his annual address, calling attention to the dangers attending the absence of medical legislation in this State, and paid his respects to the press in a very forcible manner, especially referring to the fact, that they were the mainstay of advertising quackery in humbugging the people. Statistics showing the appalling number of irregulars practicing medicine and the want of proper interest shown by the profession in securing such legislation as would place us upon a favorable footing with other States, who have progressive medical laws.

Dr. Hornor moved that the president's address be referred to a committee of three. Carried. The chair (Dr. Eberle) then appointed Dr. A. A. Hornor, Dr. T. E. Hurley and Dr. Z. Orto.

The society then adjourned.

MEDICINE IN THE NEWS



Dr. Thomas H. Hollis

DR. HOLLIS ELECTED TO COUNCIL

Dr. Thomas H. Hollis of Hot Springs was elected to represent the Seventh Councilor District on the Council of the Arkansas Medical Society at a meeting on January 19, 1986. He will fill the unexpired term of the late Dr. Edgar Clardy.

Dr. Hollis attended the University of Central Arkansas and received his medical degree from the University of Arkansas College of Medicine. His internship and residency training were at the University Medical Center.

Dr. Hollis began Family Practice in Hot Springs in 1975. He is a Diplomate of the American Board of Family Practice, and a member of the Arkansas Academy of Family Physicians. He was recently elected vice chief of staff for 1986 at AMI/National Park Medical Center in Hot Springs.

Dr. Hollis is a native of Hope. He is married to the former Brenda Bowling of Clinton, and they have two children, Tommy, age fourteen and Kathy, age nine.

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

CARDIOLOGY UPDATE 1986: ACUTE MYOCARDIAL INFARCTION

Presented by Joseph Franciosa, M.D., *April 2, 8:00 a.m.-4:30 p.m.,* University Conference Center, Statehouse Plaza, Little Rock. Seven and one-half hours Category I credit. Fee: $65. Sponsored by UAMS.

EMERGENCY MEDICINE UPDATE

April 3-4, Hilton Inn, Little Rock. 17 hours Category I credit. Sponsored by Baptist Medical Center. Call Medical Education Office, 227-2672, for further information.

USE OF LASER IN DERMATOLOGY

Presented by Dr. Spencer Albright, *April 15, 7:30 p.m.,* Spavinau Supper Club, Gravette. One hour Category I credit. Sponsored by UAMS AHEC-NW.

CONDUCT DISORDERS OF CHILDHOOD AND ADOLESCENCE

Presented by Richard L. Livingston, M.D., *April 16, 8:00 a.m. to 4:00 p.m.,* University Conference Center, Statehouse Plaza, Little Rock. Five and one-half hours Category I credit. Fee: $60 physicians; $40 allied health professionals. Sponsored by UAMS.

ANESTHESIA UPDATE

Presented by Richard B. Clark, M.D., *May 2-3,* Capital Hotel, Little Rock. Sponsored by UAMS. Time, credit hours, fee to be announced.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category 1 Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Tumor Clinic, fourth Tuesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, fourth Thursday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Gyn-Pathology Conference, second Friday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Pediatric Conference, third Friday, 12:00 p.m. to 1:00 p.m., Union Medical Center.

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology-Mortality Conference, second Thursday, 3:00 p.m., VAMC.
Radiology Conference, third Thursday, 1:00 p.m., VAMC.
ICU Lecture Series, second Friday, 1:30 p.m., VAMC.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pulmonary Conference, each Monday, 3:00 p.m., Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.

Genetics Conference, each Wednesday, 1:00 p.m., Annex Conference Room.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neuroscience Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
Neuro/Oncology Conference, third Thursday, 8:00 a.m., Second Floor Classroom.
General Pediatrics Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Pathology Conference, each third Tuesday, 3:00 p.m. to 4:00 p.m., Pathology Library.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Surgery Conference, each Thursday, 7:30 a.m. to 8:30 a.m., Conference Room #2.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #4.

LITTLE ROCK — ST. VINCENT INFIRMARY

Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
General Medicine Journal Club, first and third Tuesday, 12:00 noon to 1:00 p.m., Medical Affairs Conference Room.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Cancer Conference, first Wednesday, 12:00 noon to 1:00 p.m., CARTI Auditorium.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Education Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Education Building, Room G/106.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
OB/Gyn Grand Rounds, each Wednesday, 7:30 a.m., UAMS Education Building, Room B/135.
Psychiatry Grand Rounds, each Friday, 11:00 a.m., UAMS Shorey Auditorium.
Psychiatry Case Conference, each Friday, 1:00 p.m., UAMS Child Study Center Conference Room.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Education Building, Room G/131.
Surgical Science Seminar, each Saturday, 8:00 a.m., UAMS Education Building, Room G/131.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS ACC Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Education Building, Room G/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Education Building, Room G/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Education Building, Room G/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Education Building, Room G/135.
GI Basic Science Conference, each Thursday, 7:30 a.m., UAMS Education Building, Room G/108A&B.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Medicine Service Teaching Conference, each Monday, 8:00 a.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.
VA Surgery Tumor Board, each Tuesday, 1:00 p.m., LRVA, Room 2D109 and 2D114.
St. Vincent's Urology Grand Rounds, first Tuesday, 5:30 p.m., St. Vincent Infirmary, Education Building, Room 159.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

As organizations accredited for continuing education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

THINGS TO COME

April 2-5

Symposium on Prevention of Infections in Pediatric Office Practice and Sixth Annual Pediatric Infections Disease Seminar. Sponsored by the Health Science Center at Dallas. Hyatt Regency Hotel, New Orleans, Louisiana. 23 hours Category 1, AMA. Registration: Pre-registered $300.00; $225.00 residents; on-site registered $325.00; $250.00 residents. For further information contact Marian Troup, Department of Pediatrics, University of Texas Southwestern Medical School, 5325 Harry Hines Boulevard, Dallas, Texas 75235; telephone 1-214-688-3439.

April 7-18

A Review Course in Physical Medicine and Rehabilitation. Sponsored by the University of Washington School of Medicine. Stouffer Madison Hotel, Seattle, Washington. 81.5 hours AMA Category 1 credit. Course is designed for physiatrists preparing for Parts I and/or II of the Board Certification examination as well as physiatrists who are interested in updating their knowledge in many of the broad areas of the field. Registration before March 7th $425.00; after March 7th, $625.00. For more information write Continuing Medical Education, SC-50, University of Washington, Seattle, Washington 98195; telephone 1-206-543-1050.

April 13-18

*86th Annual Meeting of the American Roent-*Washington, D. C. Program will offer a symposi*gen Ray Society.* Sheraton Washington Hotel, um on orthopaedic radiology, a scientific program with a presentation of more than 180 papers, 48 instructional courses, awards, exhibits, and social events. Registration deadline is March 28, 1986. For more information contact American Roentgen Ray Society, 1891 Preston White Drive, Reston, Virginia 22091; telephone 1-703-648-8900.

April 17-20

110th Annual Session of the Arkansas Medical Society. Excelsior Hotel and Statehouse Convention Center, Little Rock. For specific details, see Convention Section of this issue of the Journal.

April 17-19

Forty-Eighth Annual Meeting of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society. Broadwater Beach Hotel, Biloxi, Mississippi. 8 hours AMA Category 1 credit. For more information contact Ben A. Davis, Jr., CAE, Louisiana-Mississippi Ophthalmological and Otolaryngological Society, Post Office Box 12314, Jackson, Mississippi 39236-2314; telephone 1-601-956-7787.

April 27-May 2

1986 American Occupational Health Conference. Denver Marriott, Denver, Colorado. Annual scientific and business meetings of the American Occupational Medical Association and the American Association of Occupational Health Nurses. Continuing education offerings. Registration $100.00 member; $150.00 non-member. For more information contact American Occupational Health Conference, 2340 South Arlington Heights Road, Suite 400, Arlington Heights, Illinois 60005; telephone 1-312-228-6850.

May 12-16

1986 National Conference on Health Care Leadership and Management. Doubletree Hotel at Fisherman's Wharf, Monterey, California. 18 hours CME credit. Sponsored by the American Academy of Medical Directors. For more information contact Sherry Mason, American Academy of Medical Directors, 4830 West Kennedy Boulevard, Suite 648, Tampa, Florida 33609; telephone 1-813-873-2000.

June 16-20

Medical Technology Assessment for Health Professionals. Sponsored by the Alfred P. Sloan School of Management, Massachusetts Institute of Technology. CME credit offered. Program will address ways in which technology assessment will affect the use of equipment, procedures and tests in hospitals' current economic environment. For more information contact Director of the Summer Session, Room E19-356, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139; telephone 1-617-253-2101.

August 3-19

Study Tour: Children's Health Care In Central America. Sponsored by the University of Arkansas at Little Rock. Will tour children's health care projects in Guatemala, Honduras, Nicaragua and Costa Rica. Cost approximately $1,200 per person. C.E.U. cerdits available. For more infor-

mation and itinerary contact Gene Stanford, Ph.D., Arkansas Children's Hospital, 800 Marshall Street, Little Rock, Arkansas 72202; telephone 1-501-370-1149 (days), 1-501-224-4020 (evenings).

September 17-19

American Cancer Society National Conference on Gynecologic Cancer — 1986. Atlanta Hilton, Atlanta, Georgia. 16½ hours AMA Category I credit. Registration before September 3rd: $200.00 physicians, $100.00 other health professionals; fee after September 3rd: $250.00 physicians; $150 other health professionals. No registration fee for students, interns, residents, and American Cancer Society Fellows or Career Development Awardees. For more information write American Cancer Society, 90 Park Avenue, New York, New York 10016.



PERSONAL AND NEWS ITEMS

DR. WHITE RECERTIFIED

Dr. Robert H. White of Malvern was recently recertified as a Diplomate of the American Board of Family Practice.

NEW MEDICAL STAFF

Methodist Hospital of Jonesboro recently elected new staff officers. They are Dr. Robert A. Robbins, chief of staff; Dr. Michael Tedder, vice chief of staff; Dr. John Ball, secretary; Dr. Robert Yates, OB-GYN chief of staff; Dr. Robert G. Lassonde, chief of surgery, Dr. Tedder, chief of family practice; and Dr. Robert S. Cohen, chief of medicine.

DR. RANEY RETIRES

Dr. Troy Raney recently retired after nineteen years of practice in Cave City. Dr. Raney's office will remain open and the practice continued by Dr. Andy Davidson.

DR. MANN OPENS CLINIC

Dr. R. Jerry Mann has opened the Mann Family Medical Clinic at 18 Corporate Hill Drive, Suite 100, in Little Rock for the practice of family medical care.

NEW DOCTORS IN SHERIDAN

Drs. Ted Hood, John Wright, and Sam Taggart recently began practicing at the Central Arkansas Family Clinic, 200 South Rose Street, in Sheridan. Office hours are from 4:30 p.m. until 8:00 p.m., Monday through Thursday.

DR. SWINGLE HONORED

Dr. Charles G. Swingle has been named Marked Tree's "Man of the Year" for 1985 for his thirty-two years of serving the community as a physician and for his dedication to community affairs. During the past year, Dr. Swingle has been the driving force behind the construction of the new Marked Tree Christian Center Church in which he will serve as pastor.

DOCTORS HONORED FOR YEARS OF SERVICE

Dr. Hillard Duckworth and Dr. Jerry Muse were recently presented certificates of appreciation by the Piggott Community Hospital. Dr. Duckworth was honored for thirty years of service and Dr. Muse was honored for twenty years of service.

DR. OATES RETIRES

Dr. Gordon Oates recently retired after serving twenty-one years as the Pulaski County Health Officer. The staffs of the County and State Health Departments honored Dr. Oates with a reception.

DR. CLEMENS ELECTED CHIEF OF STAFF

Dr. Dale Clemens was recently elected chief of staff at Siloam Springs Memorial Hospital.

DR. CAMPBELL NAMED FELLOW

Dr. James W. Campbell of Hot Springs has been named a Fellow of the American College of Surgeons.

DOCTOR APPOINTED TO BOARD

Dr. Jacob Amir, a hematologist and oncologist at Baptist Medical Center in Little Rock, will serve on the board of the newly organized Arkansas AIDS Foundation.

DR. BARRE APPOINTED CHIEF OF STAFF

Dr. Hal Barre, of Pocahontas, has been elected chief of staff at the Randolph County Medical Center. Dr. Barre has practiced family medicine in Pocahontas for twenty-four years.

DR. HARRIS SPEAKS TO KIWANIS CLUB

Dr. Lowell Harris recently spoke to the Hope Kiwanis Club on stress management.

DR. BROWN JOINS CLINIC

Dr. Michael Brown, a neurosurgeon, recently joined the staff of Holt-Krock Clinic in Fort Smith. He formerly practiced in Pine Bluff.

DR. HARPER NAMED CHIEF OF STAFF

Jefferson Regional Medical Center recently named Dr. William F. Harper as chief of staff. Dr. Harper joined the hospital staff in 1976.

DR. SMITH LECTURES

Dr. David E. Smith of Little Rock presented the University of Arkansas College of Pharmacy's Second Annual Distinguished Lecture on Addiction. Dr. Smith's presentation, "Cocaine: Drug of the '80's", addressed the epidemiology and treatment issues related to cocaine, including the use of support groups.

MEMORIAL FUND ESTABLISHED

A memorial fund has been established at the Washington Regional Medical Center in Fayetteville in honor of the late Dr. Wilbur G. Lawson. The memorial fund was established by the Pediatric Service physicians. Donations will be used to purchase a pulse oximeter. Contributions may be made in care of the administrative offices, Washington Regional Medical Center, 1125 North College Avenue, Fayetteville, Arkansas 72703.

PHYSICIANS LEAD PROGRAM

Rebsamen Regional Medical Center at Jacksonville and the Little Rock Air Force Base recently sponsored a two-part program entitled "Living with Crohn's Disease and Ulcerative Colitis". Dr. Gerald Silvoso of Little Rock discussed "The Nature of Crohn's Disease and Ulcerative Colitis" and Dr. Agustin Fernandez of North Little Rock discussed "Treatment and New Developments in Crohn's Disease and Ulcerative Colitis".

DR. SKAUG COORDINATES SEMINAR

Dr. Warren Skaug, a Jonesboro pediatrician, coordinated a seminar on the techniques of infant and child cardiopulmonary resuscitation. The seminar was sponsored by St. Bernard's Regional Medical Center.

DR. WALDON APPOINTED TO BOARD

Dr. G. Bruce Waldon of Rogers has been appointed to the governing board of St. Mary-Rogers Memorial Hospital.

SOCIETY ELECTS OFFICERS

The Pulaski County Medical Society has elected officers for 1986. The officers are Dr. Fred O. Henker, III, president; Dr. David L. Barclay, president-elect; Dr. John D. Pike, vice president; Dr. Robert Shannon, secretary; Dr. Carlos A. Araoz, treasurer; and Dr. J. Mayne Parker, treasurer-elect.

DR. SNYDERMAN INFORMS PUBLIC

Dr. Nancy Snyderman, medical reporter for KARK-TV, Channel 4 in Little Rock, is educating the public on health issues through her twice weekly telecasts. Dr. Snyderman is Assistant Professor of Otolaryngology at the University of Arkansas for Medical Sciences. Dr. Snyderman began medical reporting for television stations while she was a resident physician in Pittsburgh.

DR. JORDAN SPEAKS

Dr. Harry Jordan of Jonesboro recently spoke to the Lepanto Chapter of the American Association of Retired Persons on colon and rectal cancer. Dr. Jordan is a member of the AMS Speakers Bureau.

DR. BELL ELECTED MEMBER

Dr. Robert S. Bell of El Dorado has been accepted as a member of the American Academy of Orthopaedic Surgeons.

DR. DWYER SPEAKS

Dr. Gregory Dwyer, a member of the AMS Speakers Bureau, recently addressed the Pulaski Heights Senior Citizens Center in Little Rock. He spoke on the care and problems of the skin.

DOCTOR PEARCE COUNTY MEDICAL SOCIETY PRESIDENT

The Jefferson County Medical Society has elected Dr. Malcolm Pearce as its new president for 1986.

SPEAKER OF HOUSE OF DELEGATES HONORED ON BIRTHDAY

Dr. Amail Chudy of North Little Rock was recently honored at a Polish birthday party in celebration of his sixtieth birthday. The party was held in the Parish Center of St. Patrick's Catholic Church in North Little Rock.



NEW MEMBERS

The Sebastian County Medical Society has added three new members to its roll:

DR. TERESA H. HUNTON

Dr. Hunton, a native of Little Rock, graduated from the University of Arkansas in 1978 and the University of Arkansas College of Medicine in 1982. She served a flexible internship and a residency in Anesthesiology at the University of Arkansas for Medical Sciences.

Dr. Hunton is an Anesthesiologist practicing in Fort Smith. Her office address is 216-A North Greenwood.

DR. JAMES MICHAEL STANDEFER

Dr. Standefer is a native of Waco, Texas.

Dr. Standefer received his B.S. degree and his M.S. degree from Baylor University in Waco, Texas. In 1979, he graduated from the Texas Tech University School of Medicine. He served his internship at the University of Cincinnati Hospital in Cleveland, Ohio. Dr. Standefer was a Neurological Surgery resident at the Cleveland Clinic Foundation in Cincinnati from 1980-1985, and served as a Registrar in Trauma Surgery at the University of Edinburg, Edinburg, Scotland, from April 1984 to September 1984.

Dr. Standefer, a Neurological Surgeon, is a member of the staff of Holt-Krock Clinic in Fort Smith.

DR. JOHN R. SWICEGOOD

Dr. Swicegood, a native of Beaumont, Texas, is a 1976 graduate of Texas A & M University and a 1982 graduate of the University of Texas Medical School in San Antonio. He served an internship at the Orlando Regional Medical Center in Orlando, Florida, and a residency at the University of Kentucky Medical Center at Lexington, Kentucky.

Dr. Swicegood practices Anesthesiology. His office address is 216-A North Greenwood in Fort Smith.

DR. BARTHOLOME RODRIGUEZ

Dr. Rodriguez is a new member of the Conway County Medical Society. He is a native of Bayamon, Puerto Rico.

Dr. Rodriguez graduated from Yale University in 1977 and Albany Medical College of Union University in New York, in 1981. He served his internship and his residency in Gynecology at St. Vincent's Hospital in New York City.

Dr. Rodriguez practices Gynecology at the Twin Oaks Medical Center, 200 South Moose Street, in Morrilton.

DR. WILLIAM G. WAGNON

Dr. Wagnon, a native of Little Rock, has recently joined the Jefferson County Medical Society.

Dr. Wagnon received his pre-medical education at the University of Arkansas at Little Rock. He is a 1980 graduate of the University of Arkansas College of Medicine. Dr. Wagnon served a flexible internship at the Tripler Army Medical Center in Honolulu, Hawaii, and a residency in Anesthesiology at the University of Arkansas for Medical Sciences.

Dr. Wagnon is practicing at Jefferson Regional Medical Center in Pine Bluff. His office address is 1801 West 40th, Suite 2B.

DR. FRANKLIN W. WALLER

Dr. Waller is another new member of the Jefferson County Medical Society. He is a native of Pine Bluff.

Dr. Waller graduated from Tulane University in New Orleans in 1978, and the University of Arkansas College of Medicine in 1982. He served an internship and residency in Family Practice at the Area Health Education Center in Fayetteville.

Dr. Waller is in Family Practice at 1124 West Pullen in Pine Bluff.

OBITUARY

DR. JACK V. SHARP

Dr. Jack V. Sharp of Heber Springs died January 16, 1986. He was born March 23, 1916, in Sheldon, Missouri.

Dr. Sharp was a 1938 graduate of Wichita State University and a 1942 graduate of the University of Kansas School of Medicine in Wichita. His internship was at St. Louis City Hospital, St. Louis, Missouri, and he received residency training at Children's Hospital in Kansas City, Missouri. Dr. Sharp practiced in Arkansas City, Kansas, for sixteen years before moving to Heber Springs in 1964, where he practiced until his death. He was a World War II veteran, a Mason, a Shriner, a Presbyterian, and a member of the Cleburne County Medical Society.

Dr. Sharp is survived by his wife, Gerry, two sons, and a daughter.

ANNUAL MEETING PROGRAM

Excelsior Hotel and Statehouse Convention Center

April 17-20, 1986 Little Rock



CONVENTION OFFICIALS

CONVENTION CHAIRMAN: James L. Gardner, M.D., Hot Springs

COMMITTEE MEMBERS:

Kelsy Caplinger, M.D., Little Rock
Ronald Bracken, M.D., Hot Springs
Charles H. Rodgers, M.D., Little Rock
Peter Kohler, M.D., Little Rock
Jack L. Blackshear, M.D., Little Rock
John Crenshaw, M.D., Pine Bluff
Richard O. Martin, M.D., Paragould
Ken Lilly, M.D., Fort Smith
Randal Hundley, M.D., Little Rock

Ex-officio:

Mrs. Robert Valentine, North Little Rock
Mrs. James Weber, Jacksonville

SUB-COMMITTEES:

Program:

Peter Kohler, M.D., Little Rock
Charles H. Rodgers, M.D., Little Rock
Randal Hundley, M.D., Little Rock

Scientific Exhibits:

John Crenshaw, M.D., Pine Bluff

Sports:

Charles H. Rodgers, M.D., Little Rock

Speaker Hosts:

W. P. Phillips, M.D., Fort Smith, Host District Councilor
Morton Wilson, M.D., Fort Smith, Host District Councilor

Memorial Service:

A. C. Bradford, M.D., Fort Smith

Prayer Breakfast:

Walter H. O'Neal, M.D., Little Rock, Chairman of the Committee on Medicine and Religion

Shuffield Lecture:

W. P. Phillips, M.D., Fort Smith

CONTINUING MEDICAL EDUCATION CREDIT

As an organization accredited for continuing medical education, the Arkansas Medical Society Committee on Scientific Programs certifies that this continuing medical education activity meets the criteria for hour-for-hour credit in Category I of the Physician's Recognition Award of the American Medical Association.

CONVENTION GRANTS

The Arkansas Medical Society expresses appreciation to the following firms for sponsoring speakers:

American Medical International
Marion Laboratories

The Society also expresses appreciation to the following firms for support of convention activities:

Blue Cross-Blue Shield of Arkansas—Sponsoring Cocktail Reception
American Physicians Insurance—Sponsoring Cocktail Reception
Stuart Pharmaceuticals—Contribution for Coffee Break
Eli Lilly and Company—Educational Grant
Bristol Laboratories—Educational Grant

General Information

REGISTRATION

The Society's convention registration desk will be located in the Osage Room of the Statehouse Convention Center (one level below the lobby of the Excelsior Hotel). The registration hours will be:

Wednesday, April 16	3:00 p.m. - 5:00 p.m.
Thursday, April 17	8:00 a.m. - 5:00 p.m.
Friday, April 18	8:00 a.m. - 5:00 p.m.
Saturday, April 19	8:00 a.m. - 5:00 p.m.
Sunday, April 20	8:00 a.m. - 11:00 a.m.

Registration cards and badges will be prepared in advance for the officers of the Arkansas Medical Society and for the county society delegates.

All members and visitors are required to register, as admission to all sessions will be by badge only. There will be a $10 registration fee for all non-member physicians.

Advance reservations will be requested by mail for the political luncheon on Friday, for the Inaugural Banquet on Saturday evening, and for the Prayer Breakfast on Sunday morning. Please watch your mail for reservation forms.

TELEPHONE SERVICE

The Society will have a direct-line convention telephone operating at the Convention Center. The telephone number will be 372-2450. Members of the Society staff may be reached at that number during registration hours. Physicians may leave that number with their office personnel.

The telephone number for the Excelsior is 375-5000.

BLUE CROSS-BLUE SHIELD RECEPTION

Arkansas Blue Cross-Blue Shield will again sponsor a reception for all members of the Society. The reception is scheduled for 6:30 p.m. on Thursday evening, April 17, in the Excelsior.

COUNCIL RECEPTION

A reception for all members of the Society and their guests will be held from 6:30 to 8:30 p.m. on Friday evening, April 18, in the Excelsior Hotel. There will be a cash bar, hot and cold hors d'oeuvres. Plan to attend for an evening of fellowship.

API HOSPITALITY HOUR

American Physicians Insurance (API) will host a hospitality hour for members of the Society and their guests from 6:30 to 7:30 p.m. on Saturday evening. The hospitality hour immediately precedes the inaugural banquet.

INAUGURAL BANQUET

Dr. Ken Lilly of Fort Smith will be installed as the new president of the Arkansas Medical Society during the banquet on Saturday evening in the Excelsior. The current president, Dr. John P. Burge, will serve as master of ceremonies.

Entertainment for the banquet will be by "Baylor Showtime".



Baylor Showtime! will provide entertainment for the inaugural banquet on Saturday evening, April 19.

FIFTY YEAR CLUB LUNCHEON

The Society will hold a luncheon for members of the Fifty Year Club on Saturday, April 19, at 12:00 noon in the Capital Hotel. Dr. Frank Burton of Hot Springs is president of the Club and Dr. Ross Fowler of Harrison is secretary.

Physicians eligible for membership in the Fifty Year Club this year are: Drs. Robert G. Carnahan of Little Rock, Leston E. Fitch of Conway, M. Haymond Harris of Newport, John T. Herron of Little Rock, Mason G. Lawson of Little Rock, Sanford C. Monroe of Pine Bluff, Howard S. Stern of Pine Bluff, Joe Verser of Harrisburg and Hallman Sanders of Hot Springs.

PRESIDENTS' LUNCHEON

The Society will host a luncheon at 11:45 a.m. on Thursday, April 17, for physicians who have served as president of the Arkansas Medical Society. The luncheon will be held in the Excelsior Hotel.

PRAYER BREAKFAST

The Committee on Medicine and Religion will sponsor a Prayer Breakfast on Sunday morning, April 20, beginning at 7:30 a.m., for all members of the Society and the Auxiliary. The breakfast will be in the Excelsior Hotel.

Dr. Walter O'Neal, chairman of the Committee, has announced that Dr. Fred Henker of Little Rock will give the devotional for the breakfast.

Memorial Service

A joint Society-Auxiliary Memorial Service will be held at 11:30 a.m. on Saturday, April 19, in the Statehouse Convention Center.

The program will include readings from the Scripture by A. C. Bradford, M.D., of Fort Smith. Jack Blackshear, M.D., of Little Rock, will sing "The Lord is My Strength" and "The Holy City". The president of the Society, John P. Burge, M.D., of Lake Village, will read the names of members of the Society who have died during the last year and lead the audience in a Litany. Names of deceased members of the Auxiliary will be read by Mrs. Jerry Blaylock of Jonesboro, president of the Auxiliary. Mrs. Taylor Prewitt of Fort Smith will lead attendees in Prayer and benediction will be by Ken Lilly, M.D., of Fort Smith.

Members of the Society and the Auxiliary who have died during the past year are listed below.

SOCIETY MEMBERS

B. P. Briggs, M.D., Little Rock
Martha M. Brown, M.D., Little Rock
James W. Burnett, M.D., Texarkana
Bernard Capes, M.D., West Helena
Edgar K. Clardy, M.D., Hot Springs
Ralph E. Crigler, M.D., Fort Smith
Albert B. Dickey, M.D., Walnut Ridge
Robert D. Dickins, M.D., Pine Bluff
John C. Faris, M.D., Jonesboro
John W. Harper, M.D., El Dorado
N. T. Hollis, M.D., Little Rock
Wilbur G. Lawson, M.D., Fayetteville
George L. Mallory, Jr., M.D., North Little Rock
C. G. Massey, M.D., Little Rock
Roy I. Millard, M.D., Little Rock
W. E. Phipps, M.D., North Little Rock
Clark B. Proctor, M.D., Little Rock
Pierre Redman, M.D., Mena
Joe B. Scruggs, Jr., M.D., Heber Springs
Jack V. Sharp, M.D., Heber Springs
Neil H. Sims, M.D., Little Rock
Allen G. Talbot, M.D., Lake Village
E. Lloyd Wilbur, M.D., Little Rock
Marion H. Wilmoth, M.D., Nashville

AUXILIARY MEMBERS

Mrs. Harold N. Cogburn, Forrest City
Mrs. Noble Daniel, Texarkana
Mrs. G. C. DeBolt, Little Rock
Mrs. Julian Fairley, Osceola
Mrs. Ellis Gardner, Russellville
Mrs. John T. Gray, Jonesboro
(Past President of the Auxiliary)
Mrs. Daniel R. Hardeman, Little Rock
Mrs. Nicholas T. Hollis, Little Rock
Mrs. Alvin E. Longstreth, Little Rock
Mrs. Jim J. Moore, Little Rock
Mrs. Phillip G. ReMine, Fort Smith
Mrs. Guy U. Robinson, Dumas
Mrs. Paul Rountree, Little Rock
Mrs. Lonie Routen, Little Rock
Mrs. Jack V. Sharp, Heber Springs
Mrs. John G. Slater, Jr., Little Rock
Mrs. Joe G. Shelton, Ashdown

GOLF

Members of the Society and Auxiliary who may be interested in playing golf at the Little Rock Country Club during the annual meeting may contact Dr. J. Malcolm Moore at 500 South University, Little Rock 72205, telephone 664-4364.

TENNIS

Members of the Society and Auxiliary who may wish to use the facilities of the Westside Tennis and Fitness Center should contact the Center at (501) 227-4242. The Center is located at Sam Peck Road and Highway 10. Nautilus and Aerobics available.

5K FUN RUN

Smith Kline and French Laboratories will sponsor a 5K Fun Run on Saturday morning, April 19, at Riverfront Park. Warm-up will begin at 6:00 a.m. and the run at 6:30 a.m. Refreshments and prizes will be provided. Watch your mail for registration information.

The Society expresses appreciation to Smith, Kline and French and local representative Beth Dent for sponsorship of the run.

Business Session

MEETINGS OF THE COUNCIL

The Council of the Arkansas Medical Society will meet daily during the convention at times listed below. All meetings will be held in the Excelsior.

Thursday, April 17	9:00 a.m. Business session
Friday, April 18	7:30 a.m. Breakfast meeting
Saturday, April 19	7:30 a.m. Breakfast meeting
Sunday, April 20	8:30 a.m. Business session
Sunday, April 20	Immediately following adjournment of the House of Delegates (brief re-organizational meeting and group photograph of new officers)

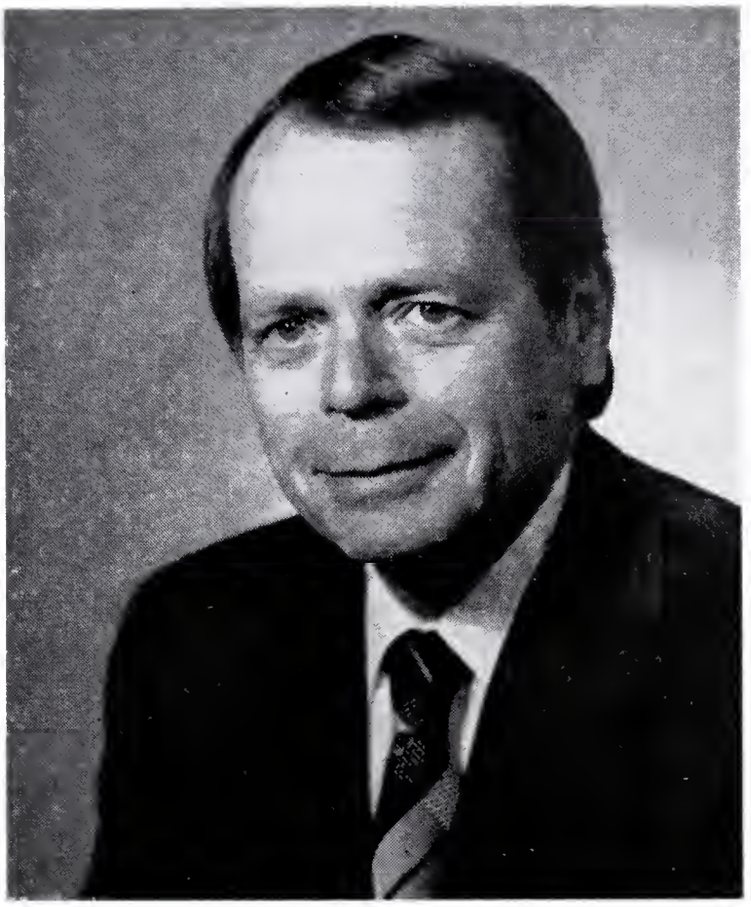
The voting members of the Council are: the councilors, the president, the first vice president, president-elect, secretary, treasurer, and immediate past president. The speaker, vice speaker, and other past presidents are members ex-officio without vote.

HOUSE OF DELEGATES

The opening session of the House of Delegates of the Arkansas Medical Society will begin at 1:00 p.m. on Thursday, April 17, in the Convention Center. The Speaker of the House of Delegates, Dr. Amail Chudy, will preside, with assistance from the Vice Speaker of the House, Dr. Sybil Hart.

All items of business to be considered by the House must either be printed in the March issue of the Journal or submitted to the headquarters office in writing twenty days prior to the meeting. Any new business proposed during the session of the House of Delegates must have two thirds vote of attending delegates for introduction.

Items of business will be referred by the Speaker of the House of Delegates to reference committees. Open hearings of the reference committees will be held following the session of the House. All members of the Society are welcome to attend the meetings of the reference committees and to express views on the various reports, resolutions, etc.



Dr. Joseph F. Boyle
Immediate Past President
American Medical Association

AGENDA
FIRST MEETING, HOUSE OF DELEGATES
1:00 p.m., Thursday, April 17
Amail Chudy, M.D., Speaker
Sybil Hart, M.D., Vice Speaker

1. Call to order
2. Introduction of Guests:
 Mrs. W. Arnold Pitchford, El Paso, Texas, Director of the American Medical Association Auxiliary
 Mrs. Frank E. Morgan, North Little Rock, President, Southern Medical Association Auxiliary
 Mrs. Jerry Blaylock, Jonesboro, President, Arkansas Medical Society Auxiliary
 Mrs. Ramon Lopez, President-elect, Arkansas Medical Society Auxiliary
3. Address by Joseph F. Boyle, M.D., Immediate Past President of the American Medical Association
4. Address by John P. Burge, M.D., President, Arkansas Medical Society
5. Adoption of minutes of the 109th Annual Session as published in the June 1985 issue of the Journal of the Arkansas Medical Society
6. Old Business
 A. S. Koenig, Jr., M.D., chairman of the Constitutional Revisions Committee, will present proposed amendments to the Constitution and Bylaws for final consideration of the House. (Amendments pertain to election of the nomi-

nating committee. Wording of amendments is included under "House of Delegates Business Affairs" heading in this section of the Journal.)

7. New Business
 A. S. Koenig, Jr., M.D., chairman of the Constitutional Revisions Committee, will present proposed amendments to the Constitution and Bylaws for first reading. The amendments primarily set out membership classifications and cut-off dates for representation on the Council and in the House of Delegates. Wording of amendments is included under "House of Delegates Business Affairs" heading in this section of the Journal.)
8. Report of the Council for meetings held since report published, J. Larry Lawson, M.D., Chairman
9. Announcement of vacancies on State Boards
10. Selection of Nominating Committee for Society Officers
 Members of the House of Delegates will meet by councilor district to select one nominating committee member from each district. The committee elected will select nominations for elections at the 1987 Annual Session. If the proposed amendment to the Constitution and Bylaws pertaining to the Nominating Committee is approved, terms of members of the nominating committee would be staggered.
11. Recess until Sunday

AGENDA
FINAL MEETING, HOUSE OF DELEGATES
10:00 a.m., Sunday, April 20
Amail Chudy, M.D., Speaker
Sybil Hart, M.D., Vice Speaker

1. Call to order
2. Election of Officers
3. Professional Liability Panel
 Speakers:
 Mr. Winslow Drummond
 The McMath Law Firm, P.A.
 Little Rock
 Mr. William A. Eldredge, Jr.
 Friday, Eldredge and Clark
 Little Rock
 Mr. Michael S. Mullen
 President
 Medical Protective Company
 Fort Wayne, Indiana
 Presentations will be followed by a question and answer session.
4. Reports of Reference Committees
5. Supplemental Report of Council covering convention meetings—J. Larry Lawson, M.D., Chairman of the Council
6. New Business
 (1) Nominations for Vacancies on State Boards
7. Adjournment

REFERENCE COMMITTEES

Reference Committees are appointed by the Speaker of the House of Delegates to consider the various reports and resolutions. Reports published in the March

issue of the Journal, as well as any reports and resolutions presented at the first meeting of the House of April 17, will be referred by the Speaker to the reference committees. The committees hold open hearings immediately following the House of Delegates session on Thursday. After the open hearing, the reference committees will hold executive sessions for the purpose of preparing recommendations and reports for the House of Delegates. Reports of Reference Committees will be acted upon by the House of Delegates at the Sunday session.

REFERENCE COMMITTEE #1:

Lloyd Langston, M.D., Pine Bluff, Chairman
Cal R. Sanders, M.D., Camden
Wendell Ross, M.D., Fort Smith
Fred Henker, M.D., Little Rock
Bryan L. Burke, M.D., Pine Bluff
Mitzi Washington, Little Rock (Medical Student observer)

REFERENCE COMMITTEE #2:

W. Ray Jouett, M.D., Little Rock, Chairman
James Armstrong, M.D., Ashdown
Carlos Araoz, M.D., Little Rock
Sam McGuire, M.D., Forrest City
Frank Lawrence, M.D., Russellville
Cynthia Stansell, Little Rock (Medical Student observer)

VACANCIES ON STATE BOARDS

Arkansas State Medical Board

A vacancy will occur in the fifth congressional district position on the Arkansas State Medical Board on December 31, 1986. Members from the counties in the district are urged to meet immediately following adjournment of the House of Delegates meeting on Sunday to vote for nominees. Nominations should be reported to Society personnel at the convention registration desk (only one nomination is required).

Warren Douglas, Little Rock, is currently serving the term which will expire in December. He is eligible to succeed himself.

Counties in the fifth congressional district are: Conway, Faulkner, Perry, Pope, Pulaski, and Yell.

Arkansas State Board of Health

Vacancies will occur December 31, 1986, in the Second and Fourth Congressional District positions on the Board of Health. Three nominations are required for each position. Those presently serving are eligible for reappointment. Members from the counties in the Second and Fourth Congressional Districts will meet to select nominees for Board positions. The meetings will be held by district immediately following the adjournment of the House of Delegates session on Thursday. Members presently serving on the Board and the counties in the districts are:

Second District:

Kenneth R. Meacham, M.D., Searcy
Cleburne, Fulton, Independence, Izard, Jackson, Lawrence, Monroe, Prairie, Randolph, Sharp, Stone, White, Woodruff.

Fourth District:

Wayne Elliott, M.D., El Dorado
Ashley, Bradley, Calhoun, Clark, Columbia, Hempstead, Howard, Lafayette, Little River, Miller, Montgomery, Nevada, Ouachita, Pike, Polk, Sevier, and Union.

MEETING OF THE ARKANSAS STATE BOARD OF HEALTH

The Arkansas State Board of Health will hold a luncheon meeting on Friday, April 18, in the Excelsior Hotel.

MEETING OF THE ARKANSAS STATE MEDICAL BOARD

The Arkansas State Medical Board will meet at 9:00 a.m. on Friday, April 18, in the Excelsior Hotel.

ARKANSAS MEDICAL SOCIETY POLITICAL ACTION COMMITTEE

The Board of Directors of the Arkansas Medical Society Political Action Committee will meet at 3:00 p.m. on Saturday, April 19, in the Excelsior Hotel.



Socioeconomic Seminar

All members of the Society and their spouses are invited to attend a seminar at 3:30 p.m. on Thursday, April 17, in the Statehouse Convention Center. Kelsy Caplinger, M.D., a member of the Annual Session Committee, will preside at the session for presentation of the program listed below.

PROPHYLAXIS FOR RETIREMENT:
Can I Afford to Retire?

WHAT ARE MY RETIREMENT GOALS: Mr. Jim Hawkins, Medical Management Consultant, Hawkins and Associates, Little Rock

CHOOSING THE RIGHT RETIREMENT PLAN(S): Mr. Hawkins and Mr. Jack Myers, Financial and Retirement Planning Consultant, Little Rock

1. IRA
2. Keogh
3. Profit Sharing/Pension Plans
4. Defined Benefit Plan

BEST WAYS TO INVEST RETIREMENT FUNDS: Mr. Myers

ESTIMATING RETIREMENT NEEDS: Mr. Hawkins

WHEN CAN I AFFORD TO RETIRE?: Mr. Hawkins

WHAT IF I AM FORCED TO RETIRE?

1. Social Security Benefits: Mr. Myers
2. Retirement Plan Assets: Mr. Myers
3. Practice Assets: Mr. Hawkins
4. Disability Income Insurance: Mr. Hawkins

HOW DO I GET MY MONEY TO RETIRE?

1. Practice Disposal (Sale): Mr. Hawkins
2. Retirement Plan Assets: Mr. Myers
3. Social Security Benefits: Mr. Myers

HOW CAN I SAVE ON TAXES?: Mr. Myers

1. Lump Sum
2. Installments
3. Pending Tax Legislation

HOW TO PLAN THE DISPOSITION OF MY ESTATE: Mr. Myers

SOCIETY/AUXILIARY POLITICAL LUNCHEON

Members of the Society and the Auxiliary are encouraged to attend a luncheon at 12:00 noon on Friday, April 18, in the Excelsior Hotel. Watch your mail for a convention brochure containing a ticket reservation form.

The Honorable Dale Bumpers, United States Senator, will present the annual Shuffield Lecture at 12:30 p.m.



Senator Dale Bumpers

Dale Bumpers has represented Arkansas in the United States Senate since 1974. He did his undergraduate work at the University of Arkansas and later received a Bachelor of Laws degree and a Juris Doctorate from Northwestern University. He practiced law, raised Angus cattle and had several business interests prior to entering politics. When he announced that he would be a candidate for governor of Arkansas, he appeared to be the longest of long shots; he defeated his Democratic opponent with 58 percent of the vote and defeated the incumbent Republican Governor with 62 percent of the vote. Senator Bumpers serves on the Senate Energy Committee, the Senate Appropriations Committee and formerly served on the Armed Services Committee. He is the ranking Democrat on the Small Business Committee and the Public Lands and Water Resources Subcommittee. Senator Bumpers has had a long interest in preventive health programs, especially childhood immunization. He has used his position on the Appropriations Committee to defend preventive health from severe budget cuts. He has particularly championed the Maternal and Child Health Care programs. "Preventive medicine is not only humane, it is a good investment from a strictly economic view as well," he says. "It costs less money to prevent diseases than it does to treat them."

Senator Bumpers has received numerous awards and honors. For their continued interest in health matters, Senator and Mrs. Bumpers were awarded the "Excellency in Public Service Award" by the American Academy of Pediatrics.

General Scientific Program

PROGRAM THEME: CORONARY ARTERIOSCLEROSIS

Friday, April 18

First General Session—Presiding: Milton Deneke, M.D., West Memphis, First Vice President

Topic: Medical vs. Surgical vs. Interventional Treatment of Coronary Artery Disease

9:30 a.m. "Medical Treatment of Coronary Artery Disease (Conservative Management)"
Charles Rackley, M.D., Professor and Chairman, Department of Medicine, Georgetown University Medical Center, Washington, D. C. 20007

10:00 a.m. "Interventional Cardiology"
Beverly J. Lorell, M.D., Assistant Professor of Medicine, Harvard Medical School, Boston, Massachusetts

10:30 a.m. "Surgical Management of Coronary Artery Disease"
Denton Cooley, M.D., Surgeon-in-Chief, St. Luke's Hospital, Houston, Texas

11:00 a.m. Panel Discussion

Second General Session—Presiding: Arthur E. Squire, M.D., Little Rock, Second Vice President

Topic: Coronary Arteriosclerosis

1:30 p.m. "Impact of DRG's"
Charles Rackley, M.D.

2:15 p.m. "Atherogenesis (New Concepts)"
Richard Jordan, M.D., Associate Professor of Medicine, University of Arkansas for Medical Sciences, Little Rock

3:00 p.m. Break

3:30 p.m. "Economics of Coronary Artery Disease ($60 Billion Business)"
Charles A. Worley, M.D., Vice President, American Academy of Family Physicians, Sweet Springs, Missouri

4:15 p.m. "The Psychiatric Aspects of Coronary Artery Disease"
Michael G. Goldstein, M.D., Instructor, Department of Psychiatry, Brown University, Providence, Rhode Island

Saturday, April 19

Third General Session—Presiding: Raymond N. Bowman, M.D., El Dorado, Third Vice President

Topic: Peripheral Vascular Disease

9:00 a.m. "Current Trends in Out-Patient Angiography"
David Harshfield, M.D., Assistant Professor, Department of Radiology, University of Arkansas for Medical Sciences, Little Rock

9:30 a.m. "Current Management of Carotid Artery Disease"
Robert Barnes, M.D., Professor and Chairman, Department of Surgery, University of Arkansas for Medical Sciences, Little Rock

10:00 a.m. Break

10:30 a.m. "The Evaluation and Treatment of Occlusive Disease Below the Inguinal Ligament"
G. Kennedy Hempel, M.D., Dallas, Texas

11:00 a.m. Panel Discussion
11:30 a.m. Adjournment

Group Specialty Meetings

The **Alan Cazort Allergy Society of Arkansas** will meet on Thursday evening at Coy's Restaurant at Little Rock with Dr. James Oleske of St. Michael's Medical Center in New York as guest speaker. Dr. Oleske's subject will be Acquired Immune Deficiency and a New Therapy.

The **Arkansas Chapter of the American College of Surgeons** will have a scientific session at 1:00 p.m. on Friday, April 18, in the Excelsior Hotel. Guest speaker will be G. Kennedy Hempel, M.D., of Dallas.

The **Arkansas Orthopaedic Society** will hold a luncheon meeting at 12:00 noon on Saturday, April 19, in the Excelsior Hotel. A business meeting will be conducted.

The **Arkansas Society of Plastic and Reconstructive Surgeons** will be having a luncheon business meeting at 12:00 noon on Saturday, April 19, in the Excelsior Hotel.

The **Arkansas Society on Internal Medicine** will meet at 12:00 noon on Saturday, April 19, in the Excelsior Hotel, Little Rock. The program will be presented by a professor from the University of Arkansas at Little Rock.

The **Arkansas Society of Pathologists** will have a luncheon business meeting at 12:00 noon on Saturday, April 19, in the Excelsior Hotel.

The **Arkansas Chapter of the American College of Radiology** will meet on Saturday, April 19, in the Excelsior Hotel. The Executive Committee will meet at 9:00 a.m. and a general business meeting will follow at 10:00 a.m. Dr. David Harshfield of the University of Arkansas for Medical Sciences will speak at the scientific session scheduled for 11:00 a.m. His topic will be "Current Trends in Outpatient Angiography". The program will be followed by a luncheon.

The **Arkansas Urologic Society** will meet on Saturday, April 19, in the Excelsior Hotel, beginning at approximately 10:30 a.m. There will be a cocktail period, followed by a luncheon at 12:00 noon. A business session will follow the luncheon. Guest speaker for the scientific program will be Dr. Winston K. Mebust from the University of Kansas.

The **Arkansas Psychiatric Society** will have a business session at 11:00 a.m. on Saturday, April 19, in the Statehouse Convention Center.

The **Arkansas Neurosurgeons** will meet at 12:00 noon on Saturday, April 19, for luncheon and a business session in the Excelsior Hotel.

The **Arkansas Academy of Family Physicians** will meet at 12:15 p.m. on Saturday, April 19, in the Excelsior Hotel. A scientific program is planned in connection with the luncheon and business meeting. Dr. Charles A. Worley, Vice President of the American Academy of Family Physicians, will be guest speaker. His topic will be "Alternate Delivery Systems".

The **Arkansas Academy of Ophthalmology** will meet at 9:00 a.m. on Saturday, April 19, for a scientific session followed by a luncheon. The meeting will be in the Excelsior/Statehouse Convention Center complex. Dr. Walter Jay of the Department of Ophthalmology of the University of Arkansas for Medical Sciences will be the guest speaker. He will speak on Ischemic Optic Neuropathy and Automated Perimetry—Principles and Concepts.

The **Department of Otolaryngology and Maxillofacial Surgery** at the University of Arkansas for Medical Sciences will have an "Alumni Day" program from 1:00 p.m. to 5:00 p.m. on Friday, April 18, in the Excelsior Hotel complex. Guest speaker will be Dr. Robert L. Simons.

The **Arkansas Society of Otolaryngology — Head and Neck Surgery** will meet at 9:00 a.m. on Saturday, April 19, in the Excelsior complex. Dr. Robert L. Simons will be guest speaker for the morning scientific session. A luncheon and business meeting will follow.

Arkansas Medical Society Auxiliary

"HARMONIES FOR HEALTH" PROGRAM

SIXTY-SECOND ANNUAL SESSION
APRIL 17-20, 1986
STATEHOUSE CONVENTION CENTER AND
EXCELSIOR HOTEL
LITTLE ROCK, ARKANSAS

Registration Hours: Statehouse Convention Center

Thursday	1:30 p.m. to 4:00 p.m.
Friday	8:00 a.m. to 12:00 Noon
Saturday	8:00 a.m. to 10:00 a.m.

Thursday, April 17

1:00 p.m. Pre-Convention Board Meeting. Joint meeting for ALL State officers, State committee chairmen, county presidents and presidents-elect. All NEW Board members for 1986-87 are cordially invited to attend.

2:30 p.m. Exchange Workshop. All 1985 officers and committee chairmen exchange ideas and workbooks with new chairmen and officers.

3:30 p.m. SOCIOECONOMIC CONFERENCE WITH ARKANSAS MEDICAL SOCIETY

6:30 p.m. Cocktail Party hosted by Arkansas Blue Cross and Blue Shield, Excelsior Hotel

Friday, April 18

8:30 a.m. Continental Breakfast, Pope Room, Statehouse Convention Center

9:00 a.m. Opening General Session, Pope Room, Statehouse Convention Center
Mrs. Jerry Blaylock, President, presiding
Invocation: Mrs. John McCollough Smith, Chaplain
Auxiliary Pledge: All Members
Welcome: Mrs. William L. Steele, President, Pulaski County Medical Auxiliary, Little Rock
Response: Mrs. Deno Pappas, 1984-85 Past President, Hot Springs
Roll Call and Seating of Delegates
Mrs. Jim Basinger, Recording Secretary
"Harmony with History—Minutes": Mrs. Frank Padburg
Introduction of Guests
Address by:
Dr. Joseph Boyle, Immediate Past President of the American Medical Association
Dr. John P. Burge, President, Arkansas Medical Society

Dr. Ken Lilly, President-elect, Arkansas Medical Society
Dr. C. C. Long, Executive Vice President, Arkansas Medical Society
Mr. Ken LaMastus, Assistant Executive Vice President, Arkansas Medical Society
Mrs. W. Arnold Pitchford, Director, American Medical Association Auxiliary

Presentation of Rules of Convention

Convention Announcements and Drawing for Door Prizes (must be present to win): Mrs. Robert Valentine or Mrs. James Weber, Convention Co-Chairmen

Announcement of Convention Committees

*Reading Committee:
Mrs. J. E. McDonald
Mrs. Paul Cornell
Mrs. Robert Valentine

*Courtesy Resolution Committee:
Mrs. Gordon Oates, Chairman
Mrs. Charles Rodgers
Mrs. Herbert Taylor

*(Committees will meet in the President's Suite immediately preceding Saturday Morning Session)

Timekeeper:
Mrs. Harold Langston, Parliamentarian

Reports of officers and committee chairmen

Unfinished Business

New Business

Election of the Nominating Committee
(2 from the Board; 2 from the House of Delegates)

Election of Delegates and Alternates to AMA Auxiliary Convention, Chicago

Presentation of the 1986-87 Budget: Mrs. Walter Mizell, Finance Chairman

Adjournment

12:00 Noon Joint luncheon with the Society, Excelsior Ballroom
Speaker: The Honorable Dale Bumpers, U. S. Senator from Arkansas

Afternoon Activities: Bus tours, boat rides (tentative)

Convention Exhibits — Be sure to take time to browse the Auxiliary Historical and Doctors' Day Exhibits

6:30 p.m. Reception hosted by the Arkansas Medical Society Council, Excelsior Hotel

9:00 p.m. Chocolate Charmer Party — Honoring Mrs. Frank Morgan, President, Southern Medical Association Auxiliary, and Mrs. W. Arnold Pitchford, Director, American Medical Association Auxiliary — Presented by the Arkansas Medical Society Auxiliary, Excelsior Hotel

Saturday, April 19

8:00 a.m. Past Presidents' Breakfast, Mezzanine, Capital Hotel

8:00 a.m. Membership Workshop
All District Vice Presidents, Members-at-Large Chairman, Resident Physician and Medical Student Spouse Chairmen, 1986-87 County Presidents, and County Presidents-elect

President-elect presiding
Mrs. W. Arnold Pitchford, Resource Person

9:00 a.m. Continental Breakfast, Pope Room, Statehouse Convention Center

9:30 a.m. Second General Session, Pope Room, Statehouse Convention Center
Mrs. Jerry Blaylock, presiding
Invocation: Mrs. John McCollough Smith, Chaplain
Roll Call and Seating of Delegates
Mrs. Jim Basinger, Recording Secretary
Reading of the Minutes of the First General Session
Mrs. Jim Basinger
Convention Announcements and Drawing for Door Prizes (must be present to win): Mrs. Robert Valentine or Mrs. James Weber, Convention Co-Chairmen
Report of Past Presidents' Breakfast
Mrs. Raymond Peeples
Introduction of Guests
Address: Mrs. Frank E. Morgan, President, Southern Medical Association Auxiliary
Reports of County Presidents
Moderators: District Vice Presidents
Southwest: Mrs. Jim Gardner
Southeast: Mrs. Robert Gullett
Northwest: Mrs. Pat Phillips
Northeast: Mrs. Jim Lytle
Registration Committee Report
Unfinished Business
New Business
Report of the Nominating Committee
Mrs. Deno Pappas, Chairman
Mrs. Larry Lawson
Mrs. Paul Meredith
Mrs. Stephen Clift
Mrs. Merrill Osborne
Election of Officers
Report of Resolutions Committee: Mrs. Gordon Oates
Adjournment

11:30 a.m. Joint Memorial Service with the Arkansas Medical Society, Statehouse Convention Center

12:45 p.m. Luncheon, Pavilion in the Park
Hostesses: Pulaski County
Invocation
Introduction of Guests
Style Show presented by Belle Tournure, Mrs. C. D. Williams, Commentator
Presentation of Awards:
AMA-ERF: Mrs. Guilford Dudley
Membership: Mrs. Ramon Lopez
Vinnie Garrison: Mrs. Lynn Harris
Doctor's Day: Mrs. Amail Chudy
Installation of Officers, Mrs. Frank Morgan
Presentation of Past President's Pin
Mrs. Walter Mizell

Presentation of President's Pin and Gavel by Mrs. Blaylock to Mrs. Valentine
President's Message: Mrs. Robert Valentine
Adjournment: Mrs. Valentine

Afternoon Activities: Shopping in Pavilion in the Park

6:30 p.m. Cocktail Party

7:30 p.m. Inaugural Dinner/Dance

Sunday, April 20

7:30 a.m. Joint Prayer Breakfast with Arkansas Medical Society, Excelsior Hotel

9:30 a.m. Post-Convention Board Meeting, Excelsior Hotel
All 1986-87 Officers, Chairmen, County Presidents, and County Presidents-elect are expected to attend.
Mrs. Robert Valentine, President, presiding



Scientific Exhibits

John Crenshaw, M.D., of Pine Bluff, chairman for the Scientific Exhibits, has arranged a number of interesting scientific exhibits. All members are encouraged to visit the exhibits as they are an integral part of the scientific program.

The following exhibits will be on display:

"Arkansas Society of Internal Medicine"
John Crenshaw, M.D., President, Arkansas Society of Internal Medicine

"Carotid Doppler, Ultrasound and Angiography Correlations"

"Cancer Treatment by Hyperthermia and Radiation"

"Treatment of Breast Cancer by Lumpectomy and Radiation"
Radiology Associates, P.A., Little Rock

"Arkansas Caduceus Club"
Janet T. Honeycutt, Executive Director, Arkansas Caduceus Club

"Bioleedback Therapy of Lower Urinary Tract Dysfunctions"
Department of Urology, University of Arkansas for Medical Sciences

"Non-Invasive Evaluation of Peripheral Vascular Disease"
Vascular Labs of Arkansas, Inc.

"Cancer of the Head and Neck"
Arkansas Cancer Research Center

"Incentives on Aging"
University of Arkansas for Medical Sciences and the John L. McClellan Memorial Medical Center

"Reactions to Fragrance Materials"
Department of Dermatology, University of Arkansas for Medical Sciences

"Interstitial Radiation for Primary Brain Tumors"
University of Arkansas for Medical Sciences and St. Vincent Infirmary

"Orbital Decompression for Exophthalmos"
Department of Otolaryngology & Maxillofacial Surgery, University of Arkansas for Medical Sciences

"Visualizing Soft Tissue Tumors by Ultrasound"
Department of Orthopaedics, University of Arkansas for Medical Sciences

"Prevention of Catheter Associated Urinary Tract Infection (UTI)"
Department of Urology, University of Arkansas for Medical Sciences

"Spontaneous Cerebospinal Fluid Otorrhea with Pneumocephalus"
Department of Otolaryngology, University of Arkansas for Medical Sciences

"Communicating Cancer"

"Housing for Out-of-Town Cancer Patients in Little Rock"

"CARTI—The Cancer Treatment Center of Arkansas"
CARTI, Little Rock

"The Impression Method of Fitting Artificial Eyes"
Department of Otolaryngology and Maxillofacial Surgery, University of Arkansas for Medical Sciences

"HARVEY (Cardiac Patient Similator)"
Richard D. Hall Cardiac Learning Foundation

"The Sesquicentennial of the National Library of Medicine"
University of Arkansas for Medical Sciences Library

"Arkansas Medical Society-American Red Cross Blood Drive"
Arkansas Medical Society-American Red Cross

"Osteoporosis Scanning"

"Percutaneous Inferior Vena Cava Filter Insertion"

"Magnetic Resonance Imaging Update"
Radiology Associates, P.A.

"AAMA"
Arkansas State Society—American Association of Medical Assistants

"Correctional Medicine in Arkansas Prisons"
Health Management Associates, Inc.

"Arkansas Medical Society Building"
Arkansas Medical Society

"Arkansas Baptist Medical-Dental Fellowship"

Technical Exhibits

Technical and scientific exhibits will be combined in Hall I of the Convention Center. All members are urged to take time to visit the displays of the exhibitors. The exhibits are a part of the educational value of the convention. Exhibitors provide financial support for the meeting. However, patronizing the exhibitors is more than reciprocation to those who help you; it is dealing with the best sources. By exhibiting or otherwise supporting your Society, these companies demonstrate their leadership and reliability as suppliers.

The following firms will be exhibiting at the meeting.

AMERICAN PHYSICIANS INSURANCE EXCHANGE

American Physicians Insurance Exchange, a doctor-owned, reciprocal insurance company, has been offering professional liability insurance to Arkansas physicians since 1979. A.P.I. Life Insurance offers tailor-made programs for physicians, including Universal Life, Disability Income, and Business Overhead Expense.

ROCHE LABORATORIES

Roche representatives will be on hand at the display to speak with physicians about Roche products. Rocephin, Bumex, and Zantac will be featured.

GLAXO, INC.

You are cordially invited to visit the Glaxco, Inc., exhibit, where a Glaxo representative will be available to answer your questions and discuss the latest clinical information on Trandate® Fortaz® and Zantac®.

CIBA-GEIGY PHARMACEUTICAL COMPANY

The Ciba-Geigy exhibit will feature LOPRESSOR, the Cardioprotective, selective Beta-Blocker, and TRANSDERM-NITRO, the Nitroclycerin choice of patients and their physicians.

WALLACE LABORATORIES

We invite you to visit our booth where the Wallace Sales Representatives will be pleased to furnish information regarding Wallace products and your related medical questions.

ABBOTT LABORATORIES

You are cordially invited to visit the Abbott exhibit, which will feature Tranxene® (clorazepate dipotassium), E.E.S.® (erythromycin ethylsuccinate tablets, USP) and other pharmaceutical products.

DODSON INSURANCE GROUP

Information on the Dividend Plan for workers' compensation insurance, a service approved by the Arkansas Medical Society. Standard, individual policies are issued with an advance premium discount PLUS a yearly opportunity for a dividend based on the cost of claims from all policyholders.

PARKE-DAVIS

We invite you to visit the Parke-Davis booth where our Sales Representatives welcome the opportunity to discuss and assist you regarding Parke-Davis products. We hope you will join us.

DEAN WITTER REYNOLDS, INC.

Dean Witter Reynolds, Inc., a full-service brokerage firm with complete access to all financial markets. A service available for retired, custodial, trust, risk or growth investments accounts.

WCO INFORMATION SYSTEMS

TIPS practice management software—total practice management for the medical professional, plus IBM and AT&T computer hardware—micro and mini systems.

ARKANSAS WHEELCHAIRS, INC.

Arkansas Wheelchairs, Inc., carries a complete selection of wheelchairs from power-driver models to the children's chairs. They also carry other specialty items for the handicapped individual.

NATIONAL MEDICAL RENTALS, INC.

Serving the home health care needs of Arkansas with hospital equipment, oxygen and related respiratory items for the patient at home.

UNITED STATES AIR FORCE HEALTH PROFESSIONS

United States Air Force Health Professions. If you've considered a change in your practice, take a look at the programs and opportunities available in Air Force medicine.

ARKANSAS BLUE CROSS AND BLUE SHIELD

Visit the Arkansas Blue Cross and Blue Shield exhibit to discuss aspects of the voluntary Preferred Payment Plan or Alternate Delivery Financing Systems. You will also have the opportunity to meet the Professional Services representative assigned to your area.

SMITH KLINE & FRENCH LABORATORIES

Smith, Kline and French representatives will be on hand to answer your specific questions and to provide information on our products and services.

RATHER, BEYER AND HARPER

Representatives of Rather, Beyer and Harper will have brochures and all information on the Arkansas Medical Society's group insurance plans. The Income Protection Plan, which has been in effect since 1947, is now being issued on a guaranteed renewable basis. Income Protection benefits are now up to $3,000 per month. Records will be available so each physician may review his insurance coverages and what he is eligible to apply for as a member of the Arkansas Medical Society.

J & B QUALITY BOOK BINDERY, INC.

Samples of hardbound volumes of medical journals, demonstrating the lasting quality of Class "A" library binding. Also samples of medical indexes manufactured by Aigner Company especially for the medical field.

RIVENDELL CHILDREN & YOUTH CENTER

Rivendell Children and Youth Center is a 64-bed free-standing psychiatric hospital specifically designed to serve emotionally disturbed children and adolescents between the ages of five and twenty-one. Rivendell provides two separate units to meet the needs of emotionally disturbed children and adolescents. Both units are designed as therapeutic communities with emphasis on the active participation of the patient in the therapeutic process. The adolescent program emphasizes more peer pressure techniques, and the children's unit emphasizes more constant adult-child interaction. Please plan to spend some time at our exhibit and visit with our staff for further information.

THE MEDICAL PROTECTIVE COMPANY

Having completed eighty-seven years of professional protection exclusively, The Medical Protective Company continues to provide unexcelled professional liability protection for physicians.

AUTOMATED BUSINESS SERVICES

The Automated Business Services exhibit will feature electronic claims submission systems and medical office management systems.

ARKANSAS ARMY NATIONAL GUARD

Opportunities for physicians in the Arkansas Army National Guard. Flexible program to accommodate your busy schedule. Paid continuing education, space available travel, low cost life insurance, and retirement plan are but a few of the benefits available in the Arkansas Army National Guard.

FIRST VARIABLE LIFE

First Variable specializes in the investment of corporate retirement plan assets. We can also invest self-employed Keogh plans, I.R.A.'s, and corporate deferred compensation programs.

J's HOMECARE MEDICAL SERVICES, INC.

J's Homecare Medical has a full line of DME equipment, all oxygen systems, Ostomy and Urostomy supplies, wheelchairs, bed, Electric carts and power chairs, and Rehabilitation equipment. We have a Respiratory Therapist and Registered Nurses on our staff available to assist the patient with his needs in the home.

THE BRIDGE WAY

Overview of services and programs for The Bridge Way, a sixty-bed psychiatric hospital. Includes adult, alcohol and drug and adolescent services.

OZARK VIDEO PRODUCTIONS, INC.

Customized surgical informed consent video tapes, as well as rehabilitative "follow-up care" video tapes, and in-office education video tapes (e.g., "Your Low Salt Diet").

SOUTHERN MEDICAL ASSOCIATION

Southern Medical Association will have information available on the advantages of membership, such as Dial Access, Video Access, Regional Postgraduate Conferences, Seminars, the Annual Scientific Assembly, and the SOUTHERN MEDICAL JOURNAL. Also, material will be available on other benefits to members: the IRA, Retirement and Insurance Programs, Universal Life, Research Project Fund, Loans and Scholarships, Hyatt Hotels Corporate Rate, the gold MasterCard, and the Physicians' Purchasing Program.

ADRIA LABS

Adria representatives invite you to visit their booth to discuss Adria products. The exhibit will feature Kaon-CL 10, Axotal, and Modane.

LINDE HOMECARE MEDICAL SYSTEMS, INC.

On display will be a complete line of home oxygen, therapy and DME equipment. Visit our booth for informational material and briefing by Linde representatives.

KNOLL PHARMACEUTICAL

Members are invited to visit the Knoll booth. Our representatives will welcome an opportunity to discuss Knoll products with you and to offer assistance.

NEW MEDICO HEAD INJURY SYSTEM

The New Medico Head Injury System has developed a system of programs providing post-hospitalization care and rehabilitation for individuals with physical, cognitive, and behavioral consequences of head injury. One such program is Timber Ridge Ranch, a community re-entry program located in Benton, Arkansas. The exhibit area will feature a videotape presentation and knowledgeable specialists who will provide information on Timber Ridge Ranch as well as the comprehensive services offered by other New Medico programs.

LITTLE ROCK AMBULATORY REHABILITATION CENTER

The Little Rock Ambulatory Rehabilitation Center is an out-patient Health Center using a comprehensive team approach to aid the physically disabled. The center is a certified CORF (Comprehensive Outpatient Rehabilitation Facility) and provides access to a wide range of specialized services.

MAXICARE ARKANSAS, INC.

Maxicare Arkansas, Inc., is a subsidiary of Maxicare Health Plans, Inc., an investor-owned, publicly-traded owner and operator of health maintenance organizations. It is among the five largest systems of HMO's in the country serving over 650,000 members in 14 states.

AMERICAN TELEDATA CORPORATION

The American Teledata Corporation exhibit will feature practice management computer systems.

UNITED STATES ARMY PROFESSIONAL SUPPORT AGENCY

Physician Placement Service for the United States Army Medical Department, both active and reserve. Information will be available about financial assistance programs for medical students, graduate medical education opportunities, as well as the large number of challenging positions in both the Active Army and the United States Army Reserve.

ST. VINCENT INFIRMARY

The St. Vincent Infirmary exhibit will include displays and educational material on the following:

(a) Vascular Disease
(b) St. Vincent Infirmary Cancer Center and Second Opinion Program
(c) Extracorporeal Shock Wave Lithotripsy service for crushing stones through the Arkansas Kidney Stone Institute at St. Vincent Infirmary

SCHERING CORPORATION

You are cordially invited to visit our booth. Representatives will be on hand to answer your questions and provide information regarding our prescription products. Our exhibit will feature the products Normodyne and Trinalin.

ST. PAUL FIRE AND MARINE INSURANCE

The St. Paul is the largest writer of medical professional liability in the United States. The booth will feature information on physicians' and surgeons' professional liability insurance. Company representatives will be present for discussion with convention members.

NORWICH EATON PHARMACEUTICALS, INC.

You are invited to visit the Norwich Eaton booth to discuss with our representatives our new long-acting injectable analgesic—Buprenex. Other products featured in our exhibit will be Entex-LA; Macrodantin; Comhist-LA, and Vinonex-TEN.

AYERST LABORATORIES

Ayerst Laboratories invites members and guests of the Arkansas Medical Society to visit our exhibit where our representatives will answer your questions concerning Ayerst Products.

COMPUTER MANAGEMENT COMPANY

Computer Management will display a new computer system for the medical practice. This is an Arkansas product with national promise.

The equipment is fast, reliable, and multi-user. The operating system can only be described as ahead of its time, allowing the system to be fitted to you. Included are features and capabilities not available elsewhere.

If you are concerned how your office is run, you need to see this system at our booth.

BURROUGHS WELLCOME COMPANY

Representatives of Burroughs Wellcome Company cordially invite you to visit our booth. Our exhibit will feature the latest product information available from Burroughs Wellcome Company and provide educational material of interest to all physicians. We will be pleased to answer your inquiries on any products of interest to members and guests.

A. H. ROBINS COMPANY

You are cordially invited to visit the A. H. Robins exhibit and meet our representatives who will welcome the opportunity to discuss our products—Reglan and Micro-K.

MICRO SUPPORT SERVICES

Micro Support Services, Inc., will provide hands-on demonstrations of its surgical specialties office management and surgical scheduling communications systems.

AMERICAN MEDICAL INTERNATIONAL

You are cordially invited to visit the AMI booth and meet our representatives who will welcome the opportunity to discuss our company with you.

EXECUTIVE YACHTS OF ARKANSAS

Full portfolio of sports yachts—offering partnerships for busy professionals. Executive Yachts is offering a practical, maintenance-free approach to yachting. We take work out of ownership and put leisure in it!

HOECHST-ROUSSEL PHARMACEUTICALS, INC.

MEDICAL DATA SYSTEMS, INC.

ALLTEL MOBILE

PACER INDUSTRIES

House of Delegates Business Affairs

Business items printed below are brought to the attention of individual members and the county medical societies. The items reported here represent those received in time for publication in advance of the meeting. All reports will be referred to reference committees. Members are urged to attend the open hearings of the reference committees to express their views. Reference committee hearings are scheduled for 2:30 p.m. on Thursday, April 17.

OLD BUSINESS

The following proposed changes in the Society Constitution and Bylaws were approved by the House of Delegates on first reading in April 1985. If approved by the House of Delegates at the 1986 meeting, the changes become effective at that time.

Bylaws, Chapter V, Election of Officers.
Section 1. Nominating Committee
Delete:

(A) Prior to adjournment of the first meeting of the House of Delegates at each Annual Session, the delegates from the component societies of each councilor district shall meet, the councilor not subject to reelection acting as chairman, and select one delegate from each district to form a committee on nominations. This committee shall consist of ten delegates, one from each councilor district. It shall meet and organize by selecting a chairman and a secretary.

Substitute:

(A) The Nominating Committee shall consist of ten members of the House of Delegates, one from each councilor district. Each member of the Committee shall serve for a term of two years, the terms being staggered so that odd and even numbered councilor district representatives shall be replaced on alternate years. In the first year following adoption of this amendment, the odd numbered councilor district appointees shall serve for one year, the even numbered councilor district appointees shall serve for two years. The names of the delegates appointed to the nominating committee shall be submitted by the senior councilors in the districts to the executive vice president no later than thirty days prior to the annual meeting. Following the first meeting of the House of Delegates at the Annual Session, the nominating committee shall meet and organize by selecting a chairman and a secretary.

The following portion of the present section (A) would remain unchanged: It shall be the duty of this committee to consult with members of the Society and to hold one or more meetings at which time the best interest of the Society and of the profession of the State for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the headquarters office no later than February 1 in the shape of a ticket containing the names of two or more members for the office of president-elect and of one member for each of the other offices to be filled at the Annual Session. No two candidates for president-elect shall be named from the same county.

NEW BUSINESS

Nominating Committee

James D. Armstrong, M.D., Chairman

The Nominating Committee wishes to present to the Society the following nominations:

President-elect: W. Ray Jonett, M.D., Little Rock
Asa A. Crow, M.D., Paragould

First Vice President: James Gardner, M.D., Hot Springs

Second Vice President: Ramon E. Lopez, M.D., Newport

Third Vice President: Paul D. Meredith, M.D., Texarkana

Treasurer: James M. Kolb, Jr., M.D., Russellville

Secretary: James R. Weber, M.D., Jacksonville

Speaker of the House: Amail Chudy, M.D., North Little Rock

Vice Speaker of House: Sybil Hart, M.D., Blytheville

Councilors:

District 1: J. Larry Lawson, M.D., Paragould
District 2: John E. Bell, M.D., Searcy
District 3: L. J. Patrick Bell, M.D., Helena
District 4: Paul A. Wallick, M.D., Monticello
District 5: Cal R. Sanders, M.D., Camden
District 6: James D. Armstrong, M.D., Ashdown
District 7: Ronald J. Bracken, M.D., Hot Springs
District 8: William N. Jones, M.D., Little Rock
Harold Purdy, M.D., Little Rock
Frank E. Morgan, M.D., North Little Rock
District 9: Robert H. Langston, M.D., Harrison
District 10: Morton C. Wilson, M.D., Fort Smith

Delegates to the AMA: Joe Verser, M.D., Harrisburg
A. E. Andrews, M.D., Texarkana

Alternate Delegates to AMA: Richard N. Pearson, M.D., Rogers
George W. Warren, M.D., Smackover

The Committee understands that if Dr. Jonett is indeed nominated, an additional vacancy from the eighth councilor district will be created and we will present a nomination to the convention at that time.

RESOLUTION BY THE POPE COUNTY MEDICAL SOCIETY REGARDING ARKANSAS PRO

WHEREAS, the Arkansas Foundation for Medical Care, acting as the official, Federally-mandated physician review organization for Arkansas, is rejecting a large number of claims on the basis of disagreement with the attending physician's diagnosis based entirely on the review of hospital records, and

WHEREAS, cases rejected are subjected to delayed or denied reimbursement which prevents patients from receiving covered services to which they are legally entitled and which is creating a growing hardship for hospitals, especially in small towns and rural communities, and

WHEREAS, no attempt has been made by the Arkansas Foundation for Medical Care to discuss cases considered for changed diagnosis with the attending physician, and

WHEREAS, failure to accept laboratory, x-ray, and other information from the admitting physician's office, even though it may be included in the hospital records, is leading to the formation of rules and policies which add substantially to hospital expense and do nothing to improve the quality of care, and

WHEREAS, the review process is often performed by physicians whose lack of training and experience may limit their understanding of some complex cases, and

WHEREAS, existing review processes are too cumbersome and lengthy to be effective in preventing long delays in payment, and

WHEREAS, over-aggressive and over-critical review practices out of proportion with other areas of the United States are being employed by the Arkansas Foundation for Medical Care,

NOW, THEREFORE, BE IT RESOLVED that the Pope County Medical Society is of the strong opinion that the Arkansas Foundation for Medical Care is responsible for creating an intolerable situation which must ultimately lead to decreased availability of health care facilities and produce a hardship for all Arkansans as well as selecting the poor and the elderly, in particular, to bear the brunt of the imposed hardship.

TRI-COUNTY RESOLUTION CONCERNING COUNCILOR DISTRICT BOUNDARIES

WHEREAS, the physicians of the counties of Fulton, Izard and Sharp organized themselves into a formal group known as the Tri-County Medical Society, and

WHEREAS, the physicians of the Tri-County Medical Society composed of the aforementioned counties did desire to become a component of the Arkansas Medical Society and assume the full responsibilities and authorities of such, and

WHEREAS, the Tri-County Medical Society was officially recognized by the Arkansas Medical Society as a component society by the Council on April 26, 1981, and

WHEREAS, the members of this Society are of the opinion that an oversight was made when the Tri-County Medical Society was recognized by the Arkansas Medical Society in that the counties of Fulton and Sharp are in the First Councilor Dis-

trict and the county of Izard is in the Second Councilor District, and

WHEREAS, the members of the Tri-County Medical Society are of the opinion they could be more effective in communicating with the Arkansas Medical Society and have more effective representation on the Council if they were all in one councilor district, and

WHEREAS, the physicians of the three counties which make up the Tri-County Medical Society feel that this representation would be improved if they were all placed in the Second Councilor District because the number of physicians in the Second Councilor District is fewer than the number in the First Councilor District and the Second Councilor District has the majority of its physicians living in a closer geographic area.

NOW, THEREFORE, BE IT RESOLVED that the Tri-County Medical Society officially requests that the Arkansas Medical Society and its appropriate bodies consider re-establishing the councilor district lines to include all the counties which compose the Tri-County Medical Society into the Second Councilor District.

COMMITTEE ON MEDICAL LEGISLATION

James R. Weber, M.D., Chairman

On behalf of the Committee on Medical Legislation, I would like to thank all those physicians who made contributions to the State Legislative Fund and contacted their Legislators about issues affecting medicine during the 1985 regular Legislative Session. My thanks also go to the Society staff in Fort Smith who prepared and mailed the "Alert" during the Session which kept you and members of the Auxiliary informed on key issues. This involved the mailing of several thousand pieces of mail.

Thanks to Mr. Mike Mitchell, our general counsel, and Mr. Ken LaMastus and Mr. David Wroten. We appreciated the assistance provided by nurses from the Medical Center who assisted in the dispensary.

A summary of the 1985 Legislative Session was mailed to all members in May 1985. That report indicated that 1,772 bills were introduced and approximately 5 percent of those in some way affected medicine. There were 1,097 bills that became law. Several bills were defeated that would have increased professional liability insurance costs to all physicians. Thanks to extremely heavy lobbying efforts, all those bills were defeated. If you sometimes wonder what you get for your Medical Society dues, the bills on malpractice that were defeated would have resulted in increased costs in your professional liability insurance in excess of what your Medical Society dues are at this time.

1986 is an election year and the Democratic Primary will occur in the spring. I encourage you, and the members of your family, to actively support the candidates of your choice, not only in contributions but also in personal time in working in their campaigns.

If you have not already done so, please make your contributions to the Arkansas Medical Society's State Legislative Fund. This fund was established for the sole purpose of making contributions to races within the State of Arkansas. This year we will be contacting all physicians and Auxiliary members who made contributions to the fund asking their recommendations as to whom to support in the upcoming State Legislative races. On behalf of the trustees of the fund, I would like to say that we feel that the input of those who contributed is extremely important in determining who will receive the contributions. During the last campaign in 1984, each contributor was asked for a recommendation. These recommendations were followed by the trustees of the fund. Each candidate for the State Legislature receiving a recommendation received a contribution from the fund.

In all probability, there will be a winter meeting of the House of Delegates in 1986 to discuss our stand on various issues prior to the start of the Legislative Session in January of 1987. The effectiveness of our "Capitol team" depends very much on the physician members of our Society. It is extremely important that you communicate with your Legislators on issues during the Session and have a good rapport with them during the year.

Listed below are the contributors to the Arkansas Medical Society State Legislative Fund for 1984 and 1985:

CONTRIBUTORS TO STATE LEGISLATIVE FUND

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William J. Roberts (1985)

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Joe A. Abrams (1984)
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C. R. Cole (1984-85)
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Merrill J. Osborne (1984)
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Stanley D. Teeter (1984-85)
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Charles F. Wilkins, Jr. (1984-85)
David M. Williams (1984-85)
Sandra Young (1985)

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Leslie F. Anderson (1984)
Glen F. Baker (1985)
Johnson J. Baker (1985)
David L. Barclay (1985)
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David W. Bevans, Jr. (1984-85)
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Harold D. Langston (1984-85)
Marvin Leibovich (1984-85)
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Steve Marks (1984-85)
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Karen Seale (1985)
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Purcell Smith, Jr. (1984-85)
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Ronald N. Williams (1984-85)
Thomas H. Wortham (1984-85)
Douglas E. Young (1984-85)

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Richard J. Lombardo (1984)

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Ralph Izard (1984)
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Robert L. Chester (1984-85)
Joe H. Dorzab (1985)
D. Bruce Glover (1984)
Archie L. Hewett (1984-85)
W. A. Holman (1985)
James T. Howell (1984-85)
William T. Huskison (1985)
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A. S. Koenig (1984)
A. Samuel Koenig (1981)
Ken Lilly (1984-85)
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William M. Sherrill (1985)
Robert J. Thompson (1984)
Roy E. Vanderpool (1985)
Rowland P. Vernon, Jr. (1984-85)
Edwin Whiteside (1985)
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Munir Zufari (1985)

St. Francis County
Sam A. McGuire (1985)

Tri-County County
Lewis Allen (1985)
David Ducker (1984-85)

Union County
Kenneth R. Duzan (1984)
Aubry Talley (1984)
George W. Warren (1984)

Van Buren County
C. G. Pearce (1984-85)

Washington County
Craig J. Brown (1984-85)
Wade W. Burnside, Jr. (1984)
James F. Cherry (1985)
George R. Cole, Jr. (1985)
David R. Crittenden (1984)
Thermon R. Crocker (1984)
David A. Davis (1985)
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Glen Fincher (1984)
Ted Fish (1985)
Leopold H. Garbutt (1984)
Peter R. Heinzelmann (1984-85)
Morriss M. Henry (1985)
Martha Hutson (1984-85)
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William C. Martin (1984)
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Charles Sisco (1984-85)
Howard L. Tice (1984)

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Dan Davidson (1984)
Robert E. Elliott (1985)
Clark Fincher (1984-85)
T. A. Formby (1985)
Jack R. Gardner (1985)
W. M. Gibbs (1985)
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John C. Henderson (1984)
David M. Johnson (1985)
Michael G. Justus (1985)
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Stan S. Schwartz (1985)
J. L. Stinnett, Jr. (1985)
S. W. Tate (1985)
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William D. White (1985)

Yell County
William L. Berry (1984)
Jerry Hodges (1984)
Jerome Luker (1984)
Damon G. H. Martin (1984)
James Manpin (1984)
James O. Pennington (1984)
Gene Ring (1984)
Gary Russell (1984)

COMMITTEE ON PUBLIC HEALTH

Don G. Howard, M.D., Chairman

The Committee on Public Health met at the Arkansas State Health Department Building on February 8, 1986, at 10:00 a.m. The members of the committee present were: Don G. Howard, M. D., Chairman; John A. Hall, M.D., Rex Ramsay, M.D., and Ben Saltzman, M.D.

The report is as follows:

1. Lay Mid-Wife—The Committee recommended that the Arkansas Medical Society continue to support the Nurse/Mid-Wife Program in its current concept. The Lay Mid-Wife Program should be maintained at its current level of operation under the administration of the Arkansas State Health Department.
2. AIDS—The committee recommended that more accurate information be disseminated to the general public by way of the Arkansas State Health Department and the local health offices.
3. Tobacco Ads—The committee recommended that all efforts be made to attempt to cause a cessation in the public dissemination of the usage of tobacco in all forms. It is recommended that more information be disseminated through the public schools and local public health offices.
4. Immunizations—The committee recommended that we support the Arkansas Public Health Department in its effort in administration of immunizations to the populous of the State of Arkansas.
5. Rural Health Conference—The committee recommended that the Rural Health Conference be supported in its present form and that all effort be made to attend the yearly meeting.
6. Birth Control for Low Income Population—The committee recommended that we continue to support the local health offices in the administration of birth control measures for the low income population.
7. Health Cost—The committee recommended that the Arkansas Medical Society continue to support the Governor's Task Force on Indigent Care and work in all areas to deliver medical cost without jeopardizing the quality of care.

SUB-COMMITTEE ON MATERNAL AND CHILD WELFARE

Robert H. Fiser, Jr., M.D., Chairman

The Sub-Committee on Maternal and Child Welfare has not had a formal meeting this year. We do have tentative plans to do so at the Annual Session.

There are some events occurring on the State level that will have an effect on maternal and child welfare of which the members should be aware. During Dr. Asa Crow's tenure as president of the Arkansas Medical Society, he discussed with Governor Bill Clinton the necessity of appointing a special commission to look into the problems of indigent health care in Arkansas. The result of that action was the passage of Act 411 of 1985 which set aside funds from the Federal Medicaid rebate for Federal fiscal year 1984 to be used by the newly established Indigent Health Care Advisory Council. These funds were set up in a trust fund account to be spent upon the advice of this Council.

The Council had its first meeting in December and is currently studying proposals for the best use of the fund. The legislation directed that emphasis be given to systems of obstetrical care and child health care services.

Since 1978, Arkansas has provided a transportation system for newborns. In December 1985, this system was expanded, now providing a helicopter, fixed-wing airplane, and a transportation van for rural hospitals to transfer critically ill newborns to the Level III nurseries in the metropolitan area. Medical officials are confident that this system contributed greatly to the dramatic lowering of the infant mortality rate in Arkansas over the period since 1978.

COMMITTEE ON CONTINUING MEDICAL EDUCATION

John Hestir, M.D., Chairman

The Committee on Continuing Medical Education reviewed two organizations this year for reaccreditation. Memorial Hospital in North Little Rock was reaccredited for two years and the Veterans Administration Medical Center in Fayetteville was reaccredited for another four years. Only one organization, the Arkansas Academy of Ophthalmology, is scheduled for reaccreditation in the coming year. They will be eligible for an additional four years.

There are currently nine organizations in Arkansas that have been fully accredited by the Committee on Continuing Medical Education and the Accreditation Council for Continuing Medical Education. They are the Arkansas Academy of Ophthalmology, Arkansas Children's Hospital, Arkansas Medical Society Committee on Scientific Affairs, Baptist Medical Center, Baxter General Hospital, Memorial Hospital, St. Joseph's Regional Health Center, St. Vincent Infirmary and the Veterans Administration Medical Center in Fayetteville. Several additional organizations have requested application forms for accreditation but none have followed through at this point.

My personal thanks to all the physicians who have served on the Committee and to those who have participated on the site survey teams.

COMMITTEE ON PUBLIC RELATIONS

Milton D. Deneke, M.D.

The past year has marked the rejuvenation of the Society's Speakers Bureau. Physician volunteers around the State have been active in speaking to local civic groups, AARP chapters and other senior citizen groups. The bureau has provided physicians to over 20 groups requesting speakers on such topics as arthritis, cancer, and wellness. Many of the groups call on a regular basis asking for additional speakers. The public relations value of the Speakers Bureau is illustrated in the letters we receive from the sponsoring groups. They all commend the Medical Society for providing the service and the speakers for their willingness to take time out of their practice to talk to their group, and then to answer the many questions that come up. The Committee on Public Relations would like to personally thank all of the physicians that have helped to provide this valuable public service.

At the 1985 Annual Session, the Society's Shuffield Award was presented to Dewey Lantrip of Little Rock. Mr. Lantrip is the Health Advocacy Services State Coordinator for the American Association of Retired Persons. Mr. Lantrip has worked diligently with members of the Arkansas Medical Society and its committees to address the common problems between the medical community and the elderly population. With Mr. Lantrip's help, the Society's Committees on Aging and Public Relations designed a form that could be used by physicians in deciding whether or not to accept assignment on Medicare patients. This form was subsequently approved by the Council at its November meeting.

One of the Committee's main goals has been to get county medical societies active in public relations activities. To help achieve this goal, the Committee sought the assistance of the county Auxiliary organizations. In eight different counties an Auxiliary member volunteered to act as a public relations liaison to help promote projects that the Committee wished to establish. The Committee then approved two pilot projects to be promoted in those counties.

The first project is Media Day. Its purposes are to open the lines of communication between the local medical community and the media, to develop a working relationship with the media in order to provide health information to the public, and to improve public opinion by changing the media's image of physicians.

The second pilot project is a local blood drive organized by the county Auxiliary and medical community to help dispel the misconception that you can get AIDS from donating blood. The goals of this program are to increase the number of donations by dispelling the rumor that you can get AIDS from donating blood, to show that physicians are active in community affairs, and to show the local medical community's commitment to a safe blood supply. The Auxiliary volunteers who wish to promote either of these programs will be offered the assistance of the Committee on Public Relations and its staff.

The Society's Annual Session Committee has approved a proposed public relations campaign for the 1986 Annual Session. The campaign's goal is to dispel the public misconception that you can get AIDS from donating blood. To accomplish this the Society will sponsor a blood drive during Annual Session. By showing the medical community's willingness to donate blood, the public will be reassured of the safety of blood donations. The campaign further shows the medical community's commitment to a safe blood supply as well as their involvement in community affairs.

As Chairman, I would like to thank those who have served on the Committee and the members of the Auxiliary who have helped promote the Committee's goals and programs.

SUB-COMMITTEE ON STATE HEALTH AND MEDICAL RESOURCES FOR CIVIL DEFENSE

Marvin Leibovich, M.D., Chairman

The above named Sub-Committee met on April 20, 1985, at the Arlington Hotel in Hot Springs, Arkansas. It was noted that thirty-four of the fifty-nine county medical societies have appointed a physician with an interest in Emergency Medical Services to serve as their county's coordinator to this Sub-Committee. Twenty-two of the thirty-four county coordinators were able to attend the April 20th meeting.

Mr. Dan Cicerello, director of disaster mitigation for the Arkansas Office of Emergency Medical Services (OES), presented an excellent discussion on disaster planning. In his discussion Mr. Cicerello provided specific information regarding the concept of developing a disaster plan including information regarding: (1) fact gathering, (2) the plan format, (3) the planning process, (4) the basic plan development, and (5) exercising the plan. Mr. Cicerello also provided the Sub-Committee with a very interesting overview of the efforts which his office has undertaken in developing a disaster plan in the event that a major earthquake should occur along the New Madrid fault. Such an event could possibly result in a disaster of unequalled proportion to the citizens of our State. In his conclusion, Mr. Cicerello stressed the importance of physician involvement in the disaster planning process.

Dr. Leibovich addressed the county coordinators and explained how the Arkansas OES and the Sub-Committee on State Health and Medical Resources for Civil Defense of the Arkansas Medical Society are working together to insure that adequate and appropriate medical resources will be available to any location in the State should a mass casualty incident occur. He also discussed the specifics of how the county coordinators would activate the medical resources, both personnel and equipment, that would be available to them in the event of a disaster.

The Sub-Committee wishes to thank the county coordinators for their willingness to be of service to both their fellow citizens and to the Arkansas Medical Society. We also want to express our appreciation to Mr. Dan Cicerello of the Arkansas Office of Emergency Medical Services for his support and for the assistance which his agency continues to provide our Sub-Committee.

This is presented as information to the Arkansas Medical Society Journal and as a partial report to the House of Delegates at the Arkansas Medical Society Annual Meeting in April, 1986.

ANNUAL SESSION COMMITTEE

James L. Gardner, M.D., Chairman

The Annual Session Committee for 1986 was composed as follows: Dr. James Gardner, Hot Springs, Chairman; Dr. Kelsy Caplinger, Little Rock, Socioeconomic Sub-Committee Chairman; Dr. Ronald Bracken, Hot Springs, Past Annual Session Committee Chairman and Advisor; Dr. Charles H. Rodgers, Little Rock, Sports Function Chairman and Scientific Sessions Sub-Committee Co-Chairman; Dr. Peter Kohler, Little Rock, Scientific Session Sub-Committee Co-Chairman; Dr. Jack L. Blackshear, Little Rock, Socioeconomic Sub-Committee Co-Chairman; Dr. John Crenshaw, Pine Bluff, Scientific Exhibits Sub-Committee Chairman; Dr. Randal Hundley, Little Rock; Dr. Richard O. Martin, Paragould; Dr. Ken Lilly, Fort Smith, Memorial Service Sub-Committee Chairman; Dr. John P. Burge, Lake Village, President of the Arkansas Medical Society; Dr. W. P. Phillips, Fort Smith, Host District Councilor and Speaker Host, and Political Function Chairman; Dr. Morton Wilson, Host District Councilor and Speaker Host; Mrs. Robert Valentine, North Little Rock, Auxiliary Convention Co-Chairman; and Mrs. James Weber, Jacksonville, Auxiliary Convention Co-Chairman.

Meetings of the Annual Session Committee were held on Sunday, August 11, Sunday, September 4, Sunday November 7, and Sunday, January 19. Each of these meetings were structured to:

(A) receive the reports of the Sub-Committee Chairmen;

(B) discuss scheduling;

(C) discuss planning for social functions;

(D) discuss speaker selections.

There was tremendous cooperation between Sub-Committee Chairmen and Society administration throughout the planning session and no major obstacles were presented. I wish to thank each of the Sub-Committee Chairmen and Co-Chairmen for their efforts and I certainly appreciate the cooperation and guidance of Miss Leah Richmond.

COMMITTEE ON AGING

Joseph A. Norton, M.D., Chairman

Our Committee met this past year. Our chief accomplishment was a continuation of good working relations with the American Association of Retired Persons (AARP) through the good service of Mr. Dewey Lantrip. Further clarification of the patient-physician relationship in Medicare matters was made, and a useful form for use by patients and physicians was accepted and distributed to physicians and AARP members. We hope now to work on other matters of common interest with AARP and others active in the matters of aging.

We do note with appreciation, the help of the Arkansas Medical Society Public Relations Committee, the concern and sensitivity of the Arkansas Medical Society Executive Committee and Council in these matters, and the excellent progress in training in geriatrics now in progress at the University of Arkansas Medical Center.

I am grateful to all those on the committee, to Mr. Lantrip and leaders of AARP in Arkansas, and to the good work of the Arkansas Medical Society office staff, especially Mr. David Wroten.

REPORT OF THE CONSTITUTIONAL REVISIONS COMMITTEE

A. S. Koenig, Jr., M.D., Chairman

In the last few years, the Constitution was changed to allow more than two councilors per district and to make the immediate past president a voting member of the Council and Executive Committee. Some sections of the Constitution and Bylaws affected by these changes were not revised. The Committee offers the following proposed revisions to bring those sections into compliance.

1. Article IX. Officers
 Delete the word "twenty" specifying the number of councilors and add "immediate past president" as an officer. The section would then read:

 "The officers of this Society shall be a president, president-elect, three vice presidents, Speaker of the House of Delegates, Vice Speaker of the House of Delegates, a secretary, a treasurer, an immediate past president, and councilors. Their qualifications and terms of office shall be as provided in these Bylaws."

2. Chapter V. Election of Officers
 Delete the words "each year ten" in Section 6 so that it will read:

 "Councilors shall be elected to serve a two-year term; all other terms of office are for one year. All officers shall serve until their successors are installed."

3. Chapter VI. Duties of Officers
 Delete the second sentence of Section 8, which reads "the two councilors in each district shall be designated 'senior' and 'junior' on the basis of length of tenure" and substitute "the one in each district with the longest tenure shall be considered the senior councilor". The revised section would then read:

 "Each councilor shall be organizer, peacemaker, and censor for his district. The one in each district with the longest tenure shall be considered the senior councilor."

The Committee was requested by the Council of the Society to present proposals regarding component society representation on the Council and in the House of Delegates. The Committee offers the following recommendations:

4. Chapter I. Membership. Section 2. Membership Classifications.
 (B) Life Membership
 Delete "an active member who" and substitute "a Physician who has been an active member of this Society for a period of ten years and who", so that the section would read:

 "A physician who has been an active member of this Society for a period of ten years and who has continuously been a member of organized medicine and has either (1) attained age seventy or (2) practiced forty-five years shall be eligible for life membership and, upon the recommendation of his component society, shall be granted such status by the House of Delegates. Life Members shall have the right to vote, hold office, and all other privileges of membership in this Society."

5. Chapter I, Membership. Section 2. Membership Classifications.
 (c) Emeritus Membership
 Delete "an active member who" and substitute "a physician who has been an active member of this Society for a period of ten years and who"; delete the word "not" in

the last sentence. The section as revised would read:

"A physician who has been an active member of this Society for a period of ten years and who has continuously been a member of organized medicine for less than forty-five years and who has fully retired from the practice of medicine shall be eligible for Emeritus Membership. Such membership shall be granted by the House of Delegates upon the recommendation of the member's component society. Emeritus members shall have the right to vote, hold office, and all other privileges of membership in this Society."

6. Chapter IV. House of Delegates. Section 6. Representation of Component Societies

Add the following as (A) (1) of Section 6:

"Representation for the House of Delegates shall be based upon the number of dues-paying active members, life members, emeritus members, and associate members as of December 31 of the year preceding the annual meeting. Those active members who are paying only one-half of the regular dues amount shall be counted in the same manner as associate members."

Retain the present wording for (A) (2) of Section 6:

"Two associate members of a component society shall count as one full membership in determining delegate representation of that component society."

Renumber the present (A) (1) as (A) (3) of Section 6 and add the words underscored:

"Each regular county society shall be entitled to send to the House of Delegates each year one delegate for every twenty-five Arkansas Medical Society members as specified in (A) (1) and (A) (2), and one for each major fraction thereof, provided that its annual report and assessment are in the hands of the executive vice president by March 1st of each year. Each county society, however, regardless of its number of members, which has complied with this section, shall be entitled to one delegate."

7. Article VI. Council.
Add the following as a new Section 3:

Section 3. Representation

"Representation on the Council shall be based upon the enumeration of members in each councilor district in accordance with provisions of these Bylaws for representation in the House of Delegates."

Renumber the present Section 3 (Executive Committee) as Section 4.

MEDICAL SERVICES REVIEW COMMITTEE

Charles H. Rodgers, M.D., Chairman

The Medical Services Review Committee consists of thirty-two physicians representing every specialty in the State. Each specialty is asked yearly to submit names to the Council of the Arkansas Medical Society for approval to serve on this committee.

The Medical Services Review Committee is a committee that serves at the pleasure of the Council of the Arkansas Medical Society and acts as an advisory committee to Arkansas Blue Cross-Blue Shield to assist in adjudicating cases of unusual nature—either in service rendered or fees charged.

In addition, the Council has recently charged the Medical Services Review Committee with the responsibility of reviewing denial cases by the Arkansas Foundation for Medical Care. The Council hopes that this will offer physician members of the Arkansas Medical Society a chance to have this respected review committee offer their opinion on whether the denial was justified. The committee members have voluntarily and in good spirit accepted this responsibility. We review selected cases that have been forwarded to Dr. C. C. Long, Executive Vice President of the Arkansas Medical Society. The Committee will probably be unable to review all of these denials but in cases where physicians are frustrated and have exhausted other avenues of appeal, the Committee will review the denied case and offer an opinion if they feel the case has merit. The Committee forwards its opinions to the office of the Arkansas Foundation for Medical Care and copies to the Health Care Financing Administration's regional office in Dallas and to members of Congress.

PROFESSIONAL RELATIONS COMMITTEE FOR FIRST COUNCILOR DISTRICT

B. P. Raney, M.D., Chairman

The First Councilor District Professional Relations Committee reviewed one complaint since

the last annual session. The complaint involved a dispute between former practice associates. The Committee contacted both physicians and advised them as to what we thought were ethical solutions to their problem.

PROFESSIONAL RELATIONS COMMITTEE FOR NINTH COUNCILOR DISTRICT

Charles A. Ledbetter, M.D., Chairman

The Ninth Councilor District Professional Relations Committee reviewed one complaint in the period from April 1985. The complaint was reviewed by the committee and was found to have developed from a misunderstanding between the patient and the attending physician. The complaint was without merit.

PROFESSIONAL RELATIONS COMMITTEE FOR TENTH COUNCILOR DISTRICT

S. E. Landrum, M.D., Chairman

The Tenth Councilor District Professional Relations Committee has had only one complaint to review during 1985. This matter was resolved fairly quickly after contacting the physician involved and was due primarily to the halting of communications at the front desk of the doctor's office.

FIFTH COUNCILOR DISTRICT

George W. Warren, M.D., Councilor

The Fifth Councilor District meeting was held at the El Dorado Golf and Country Club in El Dorado, Arkansas, on January 15, 1986. The business meeting was conducted by President Willis M. Stevens. The business meeting consisted of the election of the President, John Alexander from Magnolia; Secretary-Treasurer, Wayne Elliott of El Dorado, and Councilor, Cal Sanders of Camden.

The program for the evening was presented by T. Michael O'Gorman, M.D., from Southern Clinic, Texarkana, Texas. The substance of the program was "Physician-Owned Health Maintenance Organizations: A Logical Response to Medicine of the Eighties". Dr. O'Gorman gave his report concerning the East Texas Health Maintenance System which consists of Tyler, Longview, and Texarkana. His proposal was that the possibility existed that the physicians in our area might need to form our own Health Maintenance Organization and be a part of the Health Maintenance Organization currently existing in Texas and Texarkana. After the formal presentation, Dr. Allie Andrews, a former President of the Arkansas Medical Society, made a brief presentation and then all members of the group were available to have the opportunity to answer questions.

Appreciation was expressed to those attending for their traveling to our area to present this program. There being no further business, the program was adjourned. There were approximately fifty physicians and their wives in attendance.

EIGHTH COUNCILOR DISTRICT

W. Ray Jouett, M.D., Councilor

The Eighth Councilor District held general membership meetings on hazards of PPO's, actions of the Arkansas General Assembly, Arkansas MedCamps and plans for construction of a new hospital in the area.

Maintained through the Legislative Committee liaison with events during the Arkansas General Assembly.

Supported a resolution recommending that the State's Mental Health Service remain a unified service.

Endorsed a skin cancer detection week sponsored by the American Academy of Dermatology.

Submitted the successful candidate for the Shuffield Award, Mr. Dewey Lantrip.

Continued support of the Senior Physicians of Arkansas organization by providing monthly meetings and programs.

Contributed four scholarships to MedCamps of Arkansas.

Awarded a scholarship to a freshman medical student at the University of Arkansas College of Medicine in the amount of $4,000.

Commended a local television station for its outstanding public service during a county-wide colorectal screening program.

Sponsored the candidacy of member W. Payton Kolb, M.D., for a position on the Council on Constitution and Bylaws of the American Medical Association.

Accepted thirty-six new active members and eight courtesy members during the year, qualifying the district for a sixth councilor on attaining a membership in excess of six hundred members.

The condition of the profession within the district is fair.

NINTH COUNCILOR DISTRICT

R. H. Langston, M.D., Councilor

The eastern portion of the Ninth Councilor District met in the fall of 1985. Dr. John P. Burge, president of the Arkansas Medical Society, made a presentation and discussed the change of medical economics in rural Arkansas today. There was a large attendance at the meeting with some fifty persons present, including wives, representing most of the counties in the eastern portion of the district. The meeting was primarily for information; no actions or recommendations were made.

The councilors of the Ninth District are still concerned about apathy within the medical profession and even apathy among Medical Society members.

REPORT OF THE COUNCIL

J. Larry Lawson, M.D., Chairman

The Council met on Sunday, June 30, 1985, at the Camelot Hotel in Little Rock and transacted the following business:

1. Approved the following actions of the Executive Committee:
 (1) Appointment of a Litigation Advisory Committee to work with Mr. Mitchell in preparing the Society's case in the lawsuit brought by Mr. Paul Schaefer. The Committee is composed of H. W. Thomas, Stanley Applegate, William Jones, John Burge, Ben Saltzman, A. S. Koenig, Paul Cornell, and C. C. Long.
 (2) Authorized Mr. Mitchell to acquire an actuary to calculate the amount of damages being requested in the lawsuit filed by Mr. Schaefer. (Mr. Mitchell advised the Council that the actuary had been limited to an expense of $1,000.)
 (3) Voted to send a copy of the transcript of the April 21, 1985, Council minutes to Allan Pirnique, president of the Union County Medical Society. The agenda for that meeting included a resolution from Union County.

 The Council directed that a letter of apology be written to Dr. Pirnique regarding the failure to take action on Union County's resolution.
2. The Council approved the Chairman's staggering of terms on the Cost Effectiveness Committee and the designation of Kemal Kutait as chairman.
3. The Council approved the appointment of Glen Baker to the Pension Plan Trustees. James Weber was designated chairman of the Board of Trustees.
4. The Council considered membership changes proposed by the Washington County Medical Society and took action as follows:
 (1) The Council voted to oppose the proposed change in the Bylaws to provide a membership classification for Federal employees who do not have Arkansas licensure.
 (2) The Council voted to oppose a change in dues structure for physician couples, but to encourage both physicians to maintain membership where appropriate.
5. The Council considered the recommendation of the Reference Committee at the annual meeting that the Council change the name of the Impaired Physicians Committee. It was generally agreed that the Council should request the committee to present recommendations for the name change to the Council for its consideration.
6. Joe Verser reported on the recent meeting of the American Medical Association House of Delegates. He advised that the Society's resolution on extending the "diagnosis related group" concept to include Veterans Administration programs was referred to the Board of Trustees. The Board is to report back at the December meeting of the AMA House of Delegates.
7. The Council voted to approve continuation of the Blue Cross-Blue Shield group plan at current benefits and rates.

The Council met on Sunday, September 22, 1985, at the Camelot Hotel in Little Rock and transacted the following business:

1. The Chairman presented actions of the Executive Committee on July 24th; items from those minutes taken up separately were:
 (1) Impaired Physicians Committee
 There was discussion of the Executive Committee recommendation that the Council "should reconsider action taken at the annual meeting to rename the committee". It was generally agreed that Mr. Mitchell should study this matter and

report back to the Council at the next meeting. It was suggested that this be the first item on the agenda for the next meeting of the Council.

(2) Guidelines on contractual agreements
Mr. Mitchell discussed the desirability of providing general guidelines to members of the Society on contractual agreements and recommending that individual members contact their own attorneys for assistance.

(3) PRO Review
The Council voted to request that the Medical Services Review Committee review cases for which payment has been denied by the PRO as the cases are brought to the committee by individual physicians or hospitals. When the MSRC disagrees with the findings of the PRO, a report of the committee's review and opinion is to be forwarded to the chairman or director of the PRO and to the Council.

(4) Seminar in lieu of winter meeting
Chairman Lawson presented the Executive Committee recommendation that a seminar on alternate delivery services, drug laws, and malpractice concerns be scheduled in lieu of a winter meeting for 1985. The Council voted to hold the seminar as proposed by the Executive Committee with the provision that participation is not below the minimum required to make the seminar self supporting.

(5) Ad Hoc Committee on Lay Midwives
The Council voted to appoint an ad hoc committee of physicians from fields of practice related to obstetrics to address the problems concerning the lay midwife program in the State.

(6) Chair on Alcohol/Drug Chair at the University
Dr. Kohler discussed the request for Society support for funding of a Chair in Alcohol and Drug Abuse at the Medical College. The request was referred to the Budget Committee.

The Council approved the report of the Executive Committee covering the conference call of August 20th which is as follows:
It was explained that all the papers pertaining to the new building included:

The construction loan agreement by and between the Arkansas Medical Society Building Limited Partnership and Worthen Bank and Trust Company, N.A.

The mortgage of the property located at #10 Corporate Hill Drive owned by the Society. The mortgage was made tying the building to the loan for construction. The loan was in the amount of approximately 1.6 million dollars.

Ground lease which included stipulations that the rent for the first year would be $1.00, rent for the second year $1.00, and year three through forty $32,757. The rent of the land would begin at the completion of the building. It was mentioned that Flake and Company will charge fees for keeping records of the partnership outside that of the normal management fees.

Some changes in the original architectural plans in an effort to make the building come in on budget. The savings were $57,770.

Mr. LaMastus reported that the floor lease provided to the Medical Society for its space in the building was essentially a normal lease but because the Society would be committed to the building for a period of at least 18 years, some changes were necessary. Some of the changes were: the security deposit to be zero, the rent on the building to begin at $13.25 a square foot with a 6 percent escalator clause over five years. Wording was inserted stating that after the fifth such increase the Medical Society's rent not be any higher than the next largest tenant in the building.

Under the repairs section, wording was added stating that at the end of the sixth and twelfth year after the commencement of the lease, the landlord shall at their own expense replace the carpet and paint the offices.

Wording was added to make sure the Society had the right to sublease a portion of its 8,000 square feet.

In the area of maintenance, wording was inserted to require the landlord to make minor repairs at its own expense to the Society's leased area.

Some changes were made pertaining to the Society's liability for visitors, guests, and employees. Wording was added to clarify that

the Society would be liable only if it was negligence.

The final part of the lease was the offer and acceptance that stated the Medical Society has an option to purchase the building at the end of 18 years for $1,250,000. Wording was added stating that all heating and air conditioning equipment, elevators, and other mechanical equipment are to be in good working order and the building is to be in a reasonable state of repair.

The Council approved actions of the Executive Committee for August 28 and 29 as follows:

They voted unanimously to appropriate a maximum of $5,000 for use of the Search Committee in paying the expenses necessary to bring and interview several candidates for the job of executive vice president.

The Executive Committee discussed with Mr. Mike Mitchell the request of Mr. Winslow Drummond, president of the Arkansas Trial Lawyer's Association, to appear before the Council and agreed to extend him an invitation.

The Committee agreed to sponsor Payton Kolb for a position on the National Legislation Council of the American Medical Association.

2. Chairman Lawson announced the appointment of Carl Bell of Pine Bluff to the Impaired Physicians Committee. The appointment was ratified by the Council.
3. The Council directed the Executive Vice President to write Mr. Winslow Drummond thanking him for appearing before the Council and giving him an opportunity to submit an article for publication in the Society Journal. Mr. Mitchell volunteered to communicate with Mr. Drummond about the possibility of a Society representative meeting with the board of directors of the Trial Lawyers Association.
4. The Council voted to accept the recommendation of the Insurance Committee to add medical underwriting to the Society's Blue Cross-Blue Shield group plan for new group additions.
5. The Insurance Committee had recommended that the Insurance Committee and the Cost Containment Committee be combined. The Council voted to retain the separate committees with both committees functioning as they have been.
6. A position paper on "Patient Confidentiality" was presented for approval of the Council. The committee chairman, Dr. Kolb, presented a modification in the wording of the proposed paper. Mr. Mitchell asked that the Council allow the Committee latitude in further modification which might be necessary to be in compliance with Act 216. The Council so voted. These position papers are an addendum to the Council minutes.
7. John Hestir, chairman of Ark-PAC, reported on the AMPAC conference which he and other representatives had attended in Washington September 18-19.
8. Dr. Hestir reported as chairman of the search committee for the position of executive vice president. He reported that the committee had selected five individuals for interviews from applications received and that he anticipated the selection process could be completed within approximately eight weeks.

MORTGAGE

KNOW ALL MEN BY THESE PRESENTS:

THAT the Arkansas Medical Society, a not-for-profit corporation organized and existing under the laws of the State of Arkansas (hereinafter called "Mortgagor"), by its duly authorized president and secretary, for a valuable consideration, does hereby grant, bargain, sell and convey unto Worthen Bank & Trust Company, N.A. (hereinafter called "Mortgagee"), and unto its successors and assigns, the following described property, to-wit:

Lot 2, Corporate Hill Subdivision, in the City of Little Rock, Pulaski County, Arkansas.

TO HAVE AND TO HOLD the same unto the said Mortgagee and unto its successors and assigns forever. Mortgagor covenants with Mortgagee, its successors and assigns, that Mortgagor will forever warrant and defend the title to said property against all lawful claims whatever.

PROVIDED, however, the foregoing conveyance is given by Mortgagor as an accommodation party for the purposes of inducing Mortgagee to advance funds to the Arkansas Medical Society Building, Limited Partnership, and for securing the payment of a Promissory Note of even date herewith (the "Note"), and all extensions and renewals thereof, executed by the Arkansas Medical Society Building, Limited Partnership to Mortgagee, in the principal sum of ONE MILLION SIX HUNDED TWENTY-FIVE THOUSAND AND NO/100 DOLLARS ($1,625,000.00), bearing interest thereon from date until maturity or default at the rate recited in the Note, and thereafter at the maximum

permissible legal rate, the Note being repayable as follows:

(a) During the twelve (12) month period beginning August 14, 1985, the Arkansas Medical Society Building, Limited Partnership ("Maker") shall make monthly installments of interest only at the adjustable rate specified in the Note, with the first installment due on September 14, 1985, and successive monthly installments due on the fourteenth (14th) day of each succeeding month.

(b) During the twenty-four (24) month period beginning August 14, 1986, Maker shall make monthly installments of principal and interest with the principal balance amortized as if payable over eighteen (18) years at the fixed interest rate specified in the Note, with the first installment due on September 14, 1986, and successive monthly installments due on the fourteenth (14th) day of each succeeding month.

(c) The entire unpaid principal balance plus accrued interest, if any, shall be due and payable on August 14, 1988. Upon payment in full of said indebtedness this Mortgage shall become null and void.

Mortgagor hereby covenants and agrees to pay all taxes and special assessments as the same may become due and payable on said property if not so paid by Maker. If Maker shall make default in the payment of the above described indebtedness, or any part thereof, as the same matures, or shall breach any of the covenants contained herein, then the Mortgagee may, at its option and without notice, declare all indebtedness owing under said note to be immediately due and payable. Failure to exercise the option herein granted shall not be a waiver to exercise such option at any subsequent time.

Mortgagor hereby releases all right of appraisement or redemption under the laws of Arkansas including particularly all rights conferred by Sections 51-1111 and 51-1112, Ark. Stats. Ann.

IN WITNESS WHEREOF, this instrument is executed this _____ day of _____, 1985.

ARKANSAS MEDICAL SOCIETY

By: _____

President

GROUND LEASE AGREEMENT

THIS AGREEMENT made and entered into by and between Arkansas Medical Society, hereinafter called "Lessor", and Arkansas Medical Society Building Limited Partnership, hereinafter called "Lessee", who agree as follows:

1. *Agreement of Lease.* Lessor has agreed to lease and let and does hereby lease, let and demise unto Lessee, and Lessee has agreed to take and does hereby take from Lessor, the following described property located in Pulaski County, Arkansas, to-wit:

Lot Two (2), Corporate Hill Subdivision, in the City of Little Rock, Pulaski County, Arkansas.

2. *Term.* The term of this lease is the construction period plus forty (40) years beginning the first day the improvements are ready for occupancy.

3. *Rental Schedule.* Lessee shall pay to Lessor as rent on the first day of each year the following amounts:

Year	*Rent*
1*	$1.00
2	$1.00
3 through year 40, both inclusive,	$32,757.00 per year.

*No rent shall be charged during construction. Rent for year one begins the first day the building is ready for occupancy.

4. *Maintenance of Leased Premises.* Lessee shall be liable for all license fees, occupation taxes and the like in connection with its operation of any business from the leased premises and shall pay all charges incurred by Lessee in connection with utility services of whatever kind or nature including any sewer charges in connection with water service to the leased premises. Lessee shall be responsible for maintaining the improvements after the anticipated construction is completed upon the leased premises in a satisfactory condition and further shall be responsible for any repairs to the structure, equipment or grounds, which constitute the leased premises, and the premises shall, at all times, be maintained in a neat and orderly condition and further Lessee shall obtain and maintain in full force and effect a policy or policies of fire insurance with extended coverage with good and solvent insurance companies, subject to the approval of Lessor, and in amount acceptable to Lessor.

5. *Uses.* It is understood that Lessee shall construct a commercial building on the leased premises in accordance with the plans and specifications attached hereto and thereafter shall contract with suitable tenants for the occupancy of said building. Lessee covenants and agrees to comply with all valid laws, statutes, ordinances, regulations and legal requirements governing use of the premises and to the business conducted thereon and that Lessee will not permit or suffer the leased premises to be used for any illegal business or occupation.

6. *Prohibition Against Waste.* Lessee agrees not to commit waste or permit waste to be committed or done upon the property and that at the expiration of this lease term Lessee will promptly and peaceably deliver to Lessor the property with the constructed improvements in as good condition as it may be put during the existence of this lease, reasonable wear and tear and damage caused by fire, windstorm or other casualty commonly insured against by policies of fire and extended coverage insurance in the State of Arkansas alone excepted.

7. *Prohibition Against Assignment.* Except for the leasehold mortgage with security agreement, assignment of rents and financing statements, this lease shall not be assigned or all or any portion of demised premises sublet, except as provided in paragraph 5, by Lessee without the express approval, in writing, of Lessor given therefor in advance, but Lessor agrees such consent will not be unreasonably withheld. The General Partner of Lessee shall not be removed or replaced without the written consent of Lessor, but Lessor agrees such consent will not be unreasonably

withheld. Otherwise, the convenants and agreements herein contained shall apply to and be binding upon the respective parties hereto and upon their respective successors in interest and legal representatives.

8. *Taxes.* Lessee shall pay all taxes, legal assessments or other obligations which are or may be a lien on the leased premises before the same become delinquent. Should Lessor at any time fail to do so, Lessee shall have the right to either make such payments for the account of Lessor, in which event it will be subrogated to all rights of the holder of such liens and, in addition thereto, shall have the right to apply accruing rentals to the satisfaction of any such obligation paid by Lessor for Lessee. Should any such lien be foreclosed, Lessor shall have the right to buy the said premises and the appurtenances thereon for its own account.

9. *Damage by Casualty.* In the event the improvements on the leased premises are damaged by fire or other casualty covered by policies of insurance, Lessee agrees that the entire proceeds of the insurance coverage will be applied toward the repair or replacement of the improvements on the leased premises and further Lessee shall be solely responsible for restoring the improvements to the condition prior to the damage, as aforementioned.

10. *Warranty Provision.* Lessor hereby warrants that Lessor has an absolute and indefeasible title to the premises and property aforesaid, and that Lessor will, during the term thereof, defend the same and hold Lessee harmless against the lawful claims of any and all persons whomsoever, except, that it is understood and agreed that the property herein leased is subject to a mortgage in favor of the first mortgage lien holder, and this Lease is hereby subordinated to said lien holder.

11. *Default Provision.* If Lessee shall default in the covenants, agreements, conditions or undertakings herein contained to be kept, observed and performed by Lessee, then in any such event, it shall be lawful for Lessor, at Lessor's election, to declare the said term ended and to re-enter either with or without process of law the demised premises and the buildings and improvements then situated thereon or any part thereof, and expel, remove and put out Lessee and all persons occupying the leased premises using such force as may be necessary in so doing, and to repossess and enjoy the premises and the buildings and improvements then situated thereon again as in their first and former estate, without such re-entry and repossession working a forfeiture of the rents to be paid and the covenants to be performed by Lessee during the full term of this lease. If default shall be made in any covenant, agreement, condition or undertaking herein contained to be kept, observed and performed by Lessee, other than the payment of rent as herein provided, which cannot with due diligence be cured within a period of thirty (30) days, and if notice thereof in writing shall have been given to Lessee and Mortgagee, if any, and if Lessee, prior to the expiration of thirty (30) days from and after the giving of such notice, commences to eliminate the cause of such default and proceed diligently and with reasonable dispatch to take all steps and do all work required to cure such default and does so cure such default, then Lessor shall not have the right to declare the said term ended by reason of such default, provided, however, that the curing of any default in such manner shall not be construed to limit or restrict the right of Lessor to declare said term ended and enforce all of their rights and remedies hereunder for any other default not so cured.

The foregoing provisions for the termination of this lease for any default of any of its covenants shall not operate to exclude or suspend any other remedy of Lessor for breach of any of said covenants or for the recovery of said rent or any advance of Lessor made thereon, and in the event of the termination of this Lease as aforesaid, Lessee covenants and agrees to indemnify and save Lessor harmless from any loss arising from such termination and re-entry in pursuance thereof, and to that end Lessee covenants and agrees to pay to Lessor after such termination and re-entry, at the end of each month of the demised term, the difference between the net income actually received by Lessor from the demised premises during such month, together with the expenses of reletting and altering the improvements on said demised premises together with commissions and attorney's fees.

No remedy herein or otherwise conferred upon or reserved to Lessor shall be considered exclusive of any other remedy but the same shall be cumulative and shall be in addition to every other remedy given hereunder and now or hereafter existing at law or in equity or by statute, and every power and remedy given by this Lease to Lessor may be exercised from time to time and as often as occasion may arise or as may be deemed expedient. No delay or omission of Lessor to exercise any right or power arising from any default shall impair any such right or power or shall be construed to be a waiver of any such default or an acquiescence therein.

12. *Binding Effect.* This Lease shall inure and be binding on the respective heirs, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals this _____ day of _____, 19 ____.

Arkansas Medical Society, Lessor

By: _____

President

FLOOR LEASE AGREEMENT

1. *Parties.* THIS LEASE dated the _____ day of _____, 1985, between ARKANSAS MEDICAL SOCIETY BUILDING LIMITED PARTNERSHIP (Hereinafter called "Landlord") and ARKANSAS MEDICAL SOCIETY (Hereinafter called "Tenant").

WITNESSETH:

2. *Consideration.* Each of the aforesaid parties acknowledges receipt of a valuable consideration from the other and that they and each of them act herein in

further consideration of the covenants of the other as herein stated.

ARTICLE I

Landlord and Tenant agree as follows:

3. *Premises.* Landlord does hereby grant, demise and lease unto Tenant the premises or space in the building to be constructed (Hereinafter called "Building") in Little Rock, Arkansas, to be located on Lot 2 Corporate Hill Subdivision, on the Third Floor of the Building consisting of 8000 square feet of net rentable area (Hereinafter referred to as "Premises").

The term "Net rentable area" as used herein shall refer to (i) in the case of a single tenancy floor, all floor area measured from the plane set by the inside surface of the outer glass of the Building to the inside surface of the opposite outer wall, excluding only the areas ("service areas") within the outside walls used for elevator mechanical rooms, building stairs, fire towers, elevator shafts, flues, vents, stacks, pipe shafts and vertical ducts but including any such areas which are for the specific use of the particular tenant such as special stairs or elevators and (ii) in the case of a partial floor, all floor areas within the plane set by the inside surface of the outer glass enclosing the tenant occupied portion of the floor and measured to the mid-point of the walls separating areas leased by or held for lease to other tenants or from areas devoted to corridors, elevator foyers, restrooms, mechanical rooms, janitor closets, vending areas and other similar facilities for the use of all tenants on the particular floor (hereinafter sometimes called "common areas"), but including a proportionate part of the common areas located on such floor based upon the ratio which the tenant's net rentable area on such floor bears to the aggregate net rentable area on such floor. No deductions from net rentable area are made for columns or projections necessary to the Building. The net rentable area in the leased premises has been calculated on the basis of the foregoing definition and is hereby stipulated for all purposes hereof to be 8000 square feet, whether the same should be more or less as a result of minor variations resulting from actual construction and completion of the leased premises for occupancy so long as such work is done in accordance with the terms and provisions hereof.

Lessee is hereby granted the option of expanding the net rentable area, as space is available, at the expiration of the initial term of this Lease. Any expansion of the net rentable area shall be under the same terms as provided for herein.

4. *Use of Premises.* Premises are to be used and occupied continuously throughout the term hereof for general office purposes exclusively and no other.

5. *Term of Lease.* TO HAVE AND TO HOLD Premises unto Tenant for a period of eighteen (18) years commencing on the date on which Premises are ready for occupancy by Tenant, as certified by the architect for the building, which date is to coincide with the date the Premises are finished, as hereinafter provided. The date upon which the Premises are ready for occupancy shall be stated in a written notice to Tenant by Landlord. In this connection, the parties agree to execute a subsequent agreement setting forth the specific commencing and ending dates of the Lease as soon as the commencing date has been established.

6. *Finish Allowance.* Tenant is hereby granted a finish allowance in the amount of $10.50 per square foot of net rentable area, as above defined, in order to finish the rental space for occupancy. Any amounts required over and above the per square foot amount, previously mentioned, shall be borne by Tenant.

7. *Rental.* Tenant is to pay landlord as rental for Premises an annual rental of $13.25 per square foot, which rental is to be paid in equal monthly installments of $_____, payable in advance on the first day of each month throughout said term of this Lease. The rental shall increase annually at the rate of 6% per annum for the first five years of the lease. Thereafter, the annual rental shall increase 6% per annum not to exceed the rental paid by the Tenant in the leased premises occupying the largest area of floor space in the same building not counting that occupied by the Arkansas Medical Society. It is the intention of the parties that Tenant's rent after five (5) increases not exceed the rent paid by the next largest tenant in the building. If rent has not been paid by the 10th of the month in which it is due, 5% of the monthly payment will be assessed as a late charge. If occupancy of Premises begins before the commencement date stated above, rental for the period before the commencement date shall be paid based on a daily rate of 1/30th of the stated monthly rate.

The annual rental and the monthly installments provided herein above shall be increased annually, effective January 1 of the year following the commencement date of this Lease and thereafter on January 1 of each calendar year, by an amount equal to 6% of the rental in effect for the immediate preceding year. The monthly rental in any calendar year may be determined as follows: preceding year's monthly rental multiplied by 1.06 and rounded to the nearest dollar. If the commencement date of the term of this Lease, as above set forth, shall be on a date other than January 1, the 6% rental adjustment in the first calendar year following the commencement date shall be prorated by a fraction, a numerator of which is the remaining number of days in the year following the commencement date and the denominator of which is 365.

8. *Security.* Landlord acknowledges receipt of Tenant's check in the amount of $-----0-----to be held as security for the performance of Tenant's covenants herein contained. Upon failure of Tenant to make any payments or performance provided for herein, Landlord may apply said deposit for the payment of the last monthly rental payment hereinabove provided for, but shall not be obligated to do so. The provisions of this paragraph shall not be construed as liquidated damages, and shall not operate in any manner to reduce or release the obligations of Tenant hereunder, except insofar as the application of this money may reduce or satisfy an obligation to make payment of money. If this Lease is renewed or extended, then such deposit shall be retained by Landlord under the same

conditions for the period of such extension or renewal. If Tenant is not in default hereunder, any remaining balance of such deposit shall be returned by Landlord to Tenant within thirty (30) days after termination of this Lease or any extension hereof, without interest.

ARTICLE II

9. *Services to be Furnished by Landlord.* Landlord shall furnish Tenant while occupying Premises the following services on all days excepting Sundays, holidays and otherwise stated:

(a) Water, including cold water from mains for drinking, lavatory and toilet purposes drawn through fixtures installed by Landlord, or by Tenant with Landlord's written consent, and hot water for lavatory purposes from regular Building supply at the prevailing temperature. Tenant shall pay Landlord at rates fixed by Landlord for water furnished for any other purposes. Tenant shall not waste or permit the waste of water. If Tenant fails to promptly pay Landlord's proper charge for water, Landlord, upon not less than ten days' notice, may discontinue furnishing that service and no such discontinuance shall be deemed an eviction or disturbance of Tenant's use of Premises or render Landlord liable for damages or relieve Tenant from any obligation.

(b) Heating and air conditioning, when necessary, in Landlord's judgment, for normal comfort in Premises from 8:00 a.m. to 6:00 p.m., Monday through Friday (and on Saturdays which are not holidays from 9:00 a.m. to 1:00 p.m.). Wherever heat generating machines or equipment are used in Premises which affect the temperature otherwise maintained by the air conditioning system, Landlord reserves the right to install supplementary air conditioning units in Premises and the cost, operating and maintenance thereof shall be paid by Tenant to Landlord at reasonable rates.

(c) Electrical current for standard Building lighting fixtures provided by Landlord and electrical outlets for office equipment for ordinary purposes connected with the aforesaid use of Premises. It is understood that services furnished under Paragraphs 9 (b) and 9 (c) are building standards, and all other electrical consumption by Tenant in Premises including consumption for lighting fixtures, office equipment, air conditioning or heating beyond normal building standards or building hours shall be paid for by Tenant to Landlord at a rate fixed by Landlord.

(d) Nightly housekeeping and janitor service Monday through Friday in and about Premises. Tenant shall not provide any janitor services without Landlord's prior written consent and then only subject to supervision of Landlord and at Tenant's sole expense and responsibility and by janitor contractor or employee at all times satisfactory to Landlord.

(e) Electrical lighting services and heating and air conditioning for all public areas and special service areas of Building in the manner and to the extent deemed by Landlord to be standard.

(f) Passenger elevator service in common with Landlord and other Tenants, daily from 8:00 a.m. to 6:00 p.m. (Saturday to 1:00 p.m.), Sundays and holidays excepted, and freight elevator service in common with Landlord and other Tenants daily; Saturdays, Sundays and holidays excepted, at hours to be determined by Landlord. Such normal elevator service, passenger or freight, if furnished at other times, shall be deemed optional with Landlord and shall never be deemed a continuing obligation. Landlord, however, shall provide limited passenger elevator service daily at all times when normal passenger service is not furnished. Automatic elevator service shall be deemed "elevator service" within the meaning of this paragraph.

Landlord does not warrant that any service will be free from interruptions caused by repairs, renewals, improvements, changes of service, alternations, strikes, lockouts, labor controversies, civil commotion, riot, accidents, inability to obtain electrical power fuel, steam, water, supplies or labor or other cause beyond the reasonable control of Landlord. No such interruption of service shall be deemed an eviction or disturbance of Tenant's use and possession of Premises or any part thereof, or render Landlord liable to Tenant for damages, by abatement of rent or otherwise, or relieve Tenant from performance of Tenant's obligations under this Lease. Tenant hereby waives and releases all claims against Landlord for damages for interruption or stoppage of service.

In the event that by agreement with Tenant, Landlord furnishes extra or additional services to be paid for by Tenant, a failure to pay for such services within five (5) days after notice shall, ipso facto, authorize Landlord, in Landlord's discretion and without further notice, to discontinue such services and terminate any agreement for services. The money due for services shall be deemed additional rental due hereunder and the same shall be subject to all of the provisions pertaining to the payment of rental.

Any additional service charges paid by Tenant to Landlord for extra or additional services pursuant to this paragraph 9 shall be subject to adjustment in the same manner as the Base Rent as provided for in paragraph 6 hereof.

10. *Quiet Possession.* Tenant shall keep and perform all of its covenants of this Lease on the part of Tenant to be performed, and Landlord shall guarantee to Tenant the quiet, peaceful and uninterrupted possession of Premises.

ARTICLE III

11. *Lawful Uses.* Tenant will maintain leased Premises in a clean and healthful condition; and comply with all laws, ordinances, orders, rules and regulations (state, federal, municipal, and other agencies or bodies having any jurisdiction thereof) with reference to use, conditions, or occupancy of leased Premises.

12. *Maintenance of Premises.* Except for minor repairs which Landlord shall make at its expense, Tenant shall keep and maintain Premises in a state of good repair and tenable condition at Tenant's expense.

13. *Indemnity.* Tenant is or shall become familiar with Premises, acknowledges that the same are received by Tenant in good state of repair, accepted by Tenant in the condition in which they are now or shall be when ready for occupancy, and that Landlord shall not be liable to Tenant or Tenant's agents, employees,

invitees or visitors for any injuries, death or damage to persons or property due to condition, employees, invitees or visitors for any injuries, death or damage to persons or property due to condition, design, or defect in Building or its mechanical systems or elsewhere in Premises or Building which may not exist or hereafter occur except where due to Landlord's negligence. Tenant accepts Premises as suitable for the purposes for which the same are leased and assumes all risks of injury, death or damage to persons or property for which Tenant may become legally liable, and agrees that no representations except such as are contained herein or endorsed hereon have been made to Tenant respecting the condition of Premises.

Tenant further agrees that Tenant, at all times, will indemnify and hold harmless Landlord from all claims, damages, liabilities and expenses which may arise or be claimed against landlord by any person, firm or corporation for any injuries, death or damages to the person or property of any person, firm or corporation for which Tenant may be liable consequent upon or arising from the use or occupancy of Premises by Tenant, or consequent upon or arising from any acts, omissions, neglect, or fault of Tenant (his agents, servants, employees, licensees, customers, or invitees) or consequent upon or arising from Tenant's failure to comply with or violation of the aforesaid laws, ordinances, orders, rules, or regulations; and that Landlord shall not be liable to Tenant for any injuries, death or damages to the persons or property of Tenant which may be caused by the acts, neglect, omissions, or faults of any person, firm or corporation, and that Tenant will release, indemnify and save harmless Landlord from all such damages, liabilities, losses, death, injuries or expenses, except where due to Landlord's negligence.

The liability of Landlord to Tenant for any default by Landlord under the terms of this Lease shall be limited to the proceeds of sale on execution of the interest of Landlord in the Building in which the demised Premises are located, and Landlord shall not be personally liable for any deficiency. This clause shall not be deemed to limit or deny any remedies which Tenant may have in the event of default by Landlord hereunder which do not involve the personal liability of Landlord.

14. *Waste.* Tenant shall not commit or permit any waste to be committed whatsoever.

15. *Nuisances.* Tenant shall not create or allow any nuisance to exist in Premises, and it shall abate promptly and free of expense to Landlord any nuisance that may arise and Landlord's determination of what constitutes a nuisance shall be binding on Tenant.

16. *Invalidation of Insurance.* Tenant shall not suffer anything to be or remain upon or about Premises which will invalidate any policy of insurance which Landlord may now or hereafter have upon Building.

17. *Increased Premiums.* Tenant shall not suffer anything to be or remain upon or about Premises nor carry or nor permit upon Premises any trade or occupation or suffer to be done anything which may render an increased or extra premium payable for the insurance of Premises or Building against fire, casualty, liability or any other insurable causes, unless consented to in writing by Landlord and, if so consented to, Tenant shall pay such increased or extra premium within ten (10) days after Tenant shall have been advised of the amount thereof.

18. *Alterations.* Tenant shall not have the right to make changes, alterations, floor covering, fixtures, or additions in Premises until it has first obtained Landlord's approval in writing, which approval shall not be unreasonably withheld. Such changes, alterations, floor covering, fixtures, or additions, when made to Premises by Tenant shall at once become the property of Landlord and shall be surrendered to Landlord upon the termination in any manner of this Lease; but this clause shall not apply to movable equipment or furniture of Tenant.

19. *Use of Building Name.* Tenant shall not, except to designate the Tenant's business address (and then only in a conventional manner and without emphasis or display) use the name of the Building or any simulation or abbreviation of such name for any purpose whatsoever. Landlord shall not have the right to change the name of the Building without the prior written consent of Tenant. Tenant will discontinue using any such name and any simulation or abbreviation thereof for the purpose of designating Tenant's business address within thirty (30) days after the Tenant consents to such change of name.

20. *Signs.* Tenant shall not paint, display, inscribe, maintain, affix any sign, picture, advertisement notice, lettering or direction on any part of the outside, except on hallway doors of Premises, and then only such names or matter and in such color, size, style, character and materials as may first be approved by Landlord in writing. Landlord shall have the right to remove, at Tenant's expense, all matter other than that above provided for without notice to Tenant.

21. *Defacing Premises and Overloading.* Tenant shall not place anything or allow anything to be placed near the glass of any door, partition, wall or window which may be unsightly from outside Premises, and Tenant shall not place or permit to be placed any article of any kind on any window ledge or on the exterior walls. Blinds, shades, awnings or other forms of inside or outside window coverings, or window ventilators or similar devices, shall not be placed in or about the outside windows in Premises, except to the extent that the character, shape, color, material and make thereof is approved by the Landlord, and Tenant shall not do any painting or decorating in the Premises or make, paint, cut or drill into, or in any way deface any part of the Premises or Building without the written consent of Landlord. Tenant shall not overload any floor or part thereof in Premises, or any facility in Building or any public corridors or elevators therein while bringing in or removing any large or heavy articles, and Landlord may direct and control the locations of safes and all other heavy articles. Furniture and other large or heavy articles may not be brought into Building, removed therefrom or moved

from place to place within any portion of Premises or other portion of the Building or its equipment that would exceed the allowable load limits as set forth in the rules of the Building.

22. *Repairs.* Tenant shall at its cost and expense, repair any damage done to Premises, or Building or any part thereof, caused by the negligence of Tenant or its agents or employees; and should Tenant fail to commence making such repairs or replacements within fifteen (15) days of occurrence, Landlord may, at its option, make such repairs and replacements and Tenant shall pay the cost thereof to Landlord upon demand. At the end of the sixth year after commencement of Lease and at the end of the twelfth year, at Lessee's option, Landlord shall at its expense replace the carpet with comparable replacement and repaint premises.

23. *Assignment or Subletting.* Tenant shall not assign or sublet Premises or any part thereof without prior written consent of Landlord. It is contemplated that Lessee intends to assign or sublet a portion of the premises. Landlord shall not unreasonably withhold consent and the amount charged for subleasing shall not be basis for withholding consent. In the event of subleasing, Tenant shall at all times remain fully responsible for the rent herein specified and for compliance with all obligations hereunder.

24. *Attorney Fees.* Tenant shall pay all costs of collection, including reasonable attorney fees, if all or any part of the rent reserved herein is collected after maturity with the aid of any attorney; and also Tenant shall pay reasonable attorney fees in the event it becomes necessary for Landlord to employ an attorney to force Tenant to comply with any of the covenants, obligations or conditions imposed by this Lease.

25. *Rules of Building.* Tenant and Tenant's agents, employees and invitees will comply fully with all requirements of rules of the Building, which are a part of this Lease as though fully set out herein. Landlord shall at all times have the right to change such rules and regulations or to amend them in such reasonable manner as may be deemed advisable for safety, care and cleanliness of the leased Premises and for preservation of good order therein. All of which rules and regulations changes, and amendments will be forwarded to Tenant in writing and shall be carried out and observed by Tenant.

26. *Entry for Repairs, Etc.* Landlord, its officers, agents or representatives shall have the right to enter into and upon Premises at all reasonable times to inspect same or make such repairs or alterations as Landlord may deem necessary or desirable. Tenant shall permit Landlord at any time to inspect, erect, use and maintain, pipes, ducts, conduits and similar devices in above and through Premises, and to make any necessary repairs or alterations. Landlord shall be allowed to take all material into and upon Premises that may be required therefor without the same constituting an eviction of Tenant in whole or in part and the rent reserved shall in no wise abate while said repairs and maintenance are being made, by reason of loss or interruption of business of Tenant, or otherwise.

27. *Surrender of Premises.* Upon any termination of this Lease, by expiration, lapse of time or otherwise.

(a) Tenant shall immediately vacate Premises and surrender Premises to Landlord in good order, conditions and repair, reasonable wear and tear or casualty damage to be repaired by Landlord pursuant to paragraph 37 hereof excepted.

(b) Tenant shall surrender all keys of Premises to Landlord.

(c) Tenant grants to Landlord full authority and license to enter Premises and take possession thereof.

(d) All installations, decorations, floor covering, fixtures, additions, partitions, hardware, light fixtures, nontrade fixtures and improvements, temporary or permanent, except movable furniture and equipment belonging to Tenant, in or upon Premises, whether placed there by Tenant or Landlord, shall be Landlord's property and shall remain upon premises, all without compensation, allowance or credit to Tenant.

ARTICLE IV

28. *Rights Reserved to Landlord.* Landlord and Tenant further agree as follows:

Landlord shall have the following rights exercisable without notice and without liability to Tenant for damage or injury to property, person or business (all claims for damage therefor being hereby released by Tenant), and without effecting an eviction or disturbance of Tenant's use of possession or giving rise to any claim for setoffs, or abatement of rent:

(a) To change the street address of the Building.

(b) To install and maintain signs on the exterior and interior of the Building.

(c) To designate all sources furnishing sign painting and lettering, ice, mineral or drinking water, beverages, foods, towels, vending machines, or toilet supplies used or consumed on Premises, and Tenant shall not place any vending or dispensing machines of any kind in or about Premises without prior written consent of Landlord.

(d) To retain at all times, and to use in appropriate instances, keys to all doors within and into Premises, and Tenant shall not replace any locks without the prior written consent of Landlord.

(e) To decorate, remodel, repair, alter or otherwise prepare Premises for re-occupancy during the last six months of the term hereof, if during or prior to such time Tenant vacates the Premises, or at any time after Tenant abandons Premises.

(f) To enter Premises at reasonable hours to make inspections, or to exhibit Premises to prospective tenants, purchasers or others, or for other reasonable purposes.

(g) To have access to all mail chutes according to the rules of the United States Post Office.

(h) To require all persons entering or leaving Building, during such hours as Landlord may from time to time reasonably determine, to identify themselves to a watchman by registration or otherwise and to establish their right to enter or leave, and to exclude or expel

any peddler, solicitor or beggar at any time from Premises or Building.

(i) To approve the weight, size and location of safes, computers and other heavy articles in and about Premises and Building and to require all such items and other office furniture and equipment to be moved in and out of Building and Premises only at such times and in such manner as Landlord shall direct and in all events at Tenant's sole risk and responsibility.

(j) To decorate and to make at any time or times, at its own expense, repairs, alterations, additions and improvements, structural or otherwise, in and to Premises, Building or part thereof as Landlord may deem necessary or desirable and to perform any acts related to the safety, protection or preservation thereof, and during such operations to take into and through Premises or any part of Building all material and equipment required; and to close or temporarily suspend operation of entrances, doors, corridors, elevators or other facilities, provided that Landlord shall cause only such inconvenience or annoyance to Tenant as is reasonably necessary in the circumstances.

(k) To do or permit to be done any work in or about Premises or Building or any adjacent or nearby building, land, street or alley.

(l) To grant to anyone the exclusive right to conduct any business or render any service in Building.

(m) To close Building at 6:00 p.m. or at such other reasonable time as Landlord may determine, subject, however, to Tenant's right to admittance under such regulations as shall be prescribed from time to time by Landlord.

(n) To designate and approve, prior to installation, all types of window shades, blinds, drapes, awnings, window ventilators and other similar equipment, and to control all internal lighting that may be visible from the exterior of the Building.

(o) To have and retain a paramount title to Premises free and clear of any act of Tenant, except that this Lease shall be an encumbrance on the property and any transfer thereof shall be subject to this Lease.

29. *Default.* The following events shall be deemed to be events of default by Tenant under this Lease:

(a) Tenant shall fail to pay any installment of rent hereby reserved and such failure shall continue for a period of ten (10) days.

(b) Tenant shall fail to comply with any term, provision or covenant of this Lease, other than the payment of rent, and shall not cure such failure within fifteen days after written notice thereof to Tenant.

(c) Tenant or any guarantor of Tenant's obligations shall make an assignment for the benefit of creditors.

(d) Tenant or any guarantor of Tenant's obligations shall file a petition under any section or chapter of the National Bankruptcy Act, as amended, or under any similar law or statute of the United States or any state thereof; or Tenant or any guarantor of Tenant's obligations shall be adjudged bankrupt or insolvent in proceedings filed against Tenant or any guarantor of Tenant's obligations thereunder and such adjudication shall not be vacated or set aside or stayed within the time permitted by law.

(e) A receiver or trustee shall be appointed for all or substantially all of the assets of Tenant or any guarantor of Tenant's obligations and such receivership shall not be terminated or stayed within the time permitted by law.

(f) Tenant shall desert or vacate any substantial portion of Premises.

Upon the occurrence of any such events of default, Landlord shall have the option to pursue any one or more of the following remedies without any notice or demand whatsoever.

(a) Terminate this Lease, in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenent fails to do so, Landlord may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession and expel or remove Tenant and any other person who may be occupying Premises or any part thereof, by force if necessary, without being liable for prosecution or amount of all loss and damage which Landlord may suffer by reason of such termination, whether through liability to relet Premises on satisfactory terms or otherwise.

(2) Without terminating this Lease, enter upon and take possession of the Premises and expel or remove Tenant and any other person who may be occupying Premises or any part thereof, make such alterations and repairs as may be necessary in order to relet the Premises, and relet the Premises or any part thereof for such term and at such rental and upon such other terms and conditions as Landlord in its sole discretion may deem advisable; upon each such reletting all rentals received by Landlord from such reletting shall be applied: first, to the payment of any indebtedness other than rent hereunder due from Tenant to Landlord; second, to the payment of any costs and expenses of such reletting including brokerage fees and attorney's fees and costs of such alterations and repairs; third, to the payment of any rent due and unpaid hereunder; and the residue, if any, shall be held by landlord and applied in payment of future rent as the same may become due and payable hereunder. If such rentals received from such reletting during any month shall be less than the rent to be paid during that month by Tenant hereunder, Landlord shall be construed as an election on its part to terminate this Lease unless a written notice of such intention shall be given to Tenant; and any attempt by Landlord to mitigate its claim for damages against Tenant by reletting the Premises shall not be construed as a waiver of its right to damages under this section.

(3) To enter upon Premises by force if necessary without being liable for prosecution or any claim for damages therefor, and do whatever Tenant is obligated to do under the terms of this Lease; and Tenant agrees to reimburse Landlord on demand for any expenses Landlord may incur in thus effecting compliance with Tenant's obligations under this Lease, and Tenant further agrees that Landlord shall not be liable for any damages resulting to the Tenant from such action, whether caused by negligence of Landlord or otherwise.

(f) Upon any event of default by the Tenant all unpaid rent payments due under the terms of the Lease are due and payable immediately upon demand by the Landlord.

Tenant does hereby grant Landlord a security interest in all furniture, chattels and other items of personal property located in or on said leased Premises to secure the performance of all covenants contained herein and under such security interest so granted Landlord shall have the right in the event of default in the performance of any covenant contained herein to enter the Premises and take possession of any and all of said furniture, chattels and other items of personal property in or on said leased Premises and sell the same under the provisions of Article 9 of the Uniform Commercial Code of the State of Arkansas and Tenant agrees to make good any deficiency after application of the proceeds of such sale for amounts due and owing Landlord, if any.

Pursuit of any of the foregoing remedies shall not preclude pursuit of any of the other remedies herein provided, or any other remedies provided by law, nor shall pursuit of any remedy herein provided constitute a forfeiture or waiver of any rent due to Landlord hereunder or of any damages accruing to Landlord by reason of the violation of any of the terms, provisions and covenants herein contained. No waiver by Landlord of any violation or breach of any of the terms, provisions and covenants contained in this Lease shall be deemed or construed to constitute a waiver of any other or succeeding violation or breach of any of the terms, provisions, and covenants herein contained. Forbearance by Landlord to enforce one or more of the remedies herein provided upon an event of default shall not be deemed or construed to constitute a waiver of such default.

30. *Estoppel Certificate by Tenant.* From time to time, upon not less than ten (10) days prior request by Landlord, Tenant shall execute and deliver to Landlord a statement in writing certifying (a) that Tenant is in full possession of leased Premises as defined in paragraph 3, (b) that this Lease is unmodified and in full force and effect (or if there have been modifications that the same is in full force and effect as modified and certifying the modifications), (c) the commencement and ending dates of the lease and the dates to which the rent and other charges have been paid, and (d) that so far as the person making the certificate knows, Landlord has completed preparation of the space and is not in default under any provision of this Lease.

31. *Subordination of Lease.* The rights of Tenant under this Lease shall be and are hereby made paramount and superior, at all times, to the lien of any mortgage or mortgages (or trust indentures) now or hereafter in force against the land, Building, the fee or the underlying leasehold estate, if any, and to all renewals, modifications, consolidations, replacements and extensions thereof, and to all advances made or hereafter to be made upon the security thereof. Tenant agrees in the event any proceedings are brought for the foreclosure of any such mortgage to attorn to the purchaser upon any such foreclosure sale and to recognize such purchaser as Landlord under this Lease. Tenant agrees to execute and deliver at any time and from time to time upon the request of Landlord any instrument which may be necessary or appropriate in any such event to evidence such attornment. Tenant further waives the provisions of any statute or law now or hereafter in effect which may give or purport to give Tenant any right to terminate or otherwise adversely affect this lease in the event any such foreclosure proceeding is brought.

32. *Renewal or Amendment.* No renewal or amendment of this Lease shall be binding on either party unless it is in writing and signed by Landlord and Tenant.

33. *Holding Over.* Should Tenant or any of its successors in interest hold over the demised Premises or any part thereof, after the expiration of the term of this Lease, such holding over shall constitute and be construed as tenancy from month to month only. Tenant will pay as liquidated damages each month during the holdover period, an amount equal to double the rent paid or due to be paid during the last month of the term of this Lease. No receipt of money by Landlord from tenant after termination of this Lease shall reinstate or extend this Lease or affect any prior notice given by Landlord to Tenant. Any extension of this Lease shall be in writing signed by Landlord and Tenant.

34. *Waiver of Liability.* As part of the consideration for this Lease, Tenant hereby releases Landlord from all liability for damage to any property of Tenant located in or upon Building which results from the negligence of Landlord, to the extent any such loss or damage is covered by insurance maintained by Tenant. Also, as part of the consideration for this Lease, Landlord hereby releases Tenant from all liability for damage to any property of Landlord located in or upon Building which results from the negligence of Tenant, to the extent any such loss or damage is covered by insurance maintained by Landlord. Tenant and Landlord further covenant that any insurance maintained by either party shall contain an appropriate provision whereby the insurance company or companies consent to the foregoing mutual release of liability and so waive insurance subrogation rights to the extent of the agreement contained in this paragraph; provided that Landlord's release shall only be operative upon proof of insurance coverage accepted by Landlord and its insurer.

35. *Covenants to Run to Heirs, Etc.* All covenants, conditions, agreements and undertakings in this Lease contained shall extend and inure to the benefit of Landlord and its successors and assigns, and, successors and assigns of Tenant the same as if they were in every case named and expressed; and except as herein otherwise provided, all said covenants, conditions and agreements shall be binding upon the successors and assigns, of the respective parties.

36. *Damage by Fire or Other Casualty.* If any part of the Premises or a material portion of Building in which Premises are located which affects Tenant's

occupancy is rendered untenable by fire or other casualty. Tenant may elect (a) to terminate this Lease as of the date of the fire or casualty by notice to Landlord within sixty (60) days after the date, or (b) to repair, restore or rehabilitate Building or Premises at Landlord's expense, in which event this Lease shall not terminate but rent shall be abated on a per diem basis while Premises are untenable, prorated for that portion of Tenant's premises that are untenable. If such damage is due to act or omission of Tenant, Landlord shall have such rights as are set forth herein at Tenant's cost and expense. If Tenant elects so to repair, restore, or rehabilitate Building or Premises, said work shall be undertaken and prosecuted with all due diligence and speed. In the event of termination of the Lease pursuant to this paragraph, rent shall be apportioned on a per diem basis and paid to the date of the fire or casualty.

37. *Condemnation.* If the land or Building, or any part thereof, or any interest therein, be taken by virtue of eminent domain or for any public or quasi-public use or purpose, Tenant shall have the right to terminate this Lease at the date of such taking or within six (6) months thereafter by giving the Landlord thirty (30) days' prior notice of the date of such termination. Any interest which tenant may have or claim to have in any award resulting from any condemnation proceedings shall be limited to the unamortized value of any permanent improvements to the structure of Building paid for directly by Tenant and any claim for furniture or equipment of any nature whatsoever shall be excluded.

38. *Notices.* Any notice required or desired to be given in connection with this Lease shall be in writing sent by first class mail, postage prepaid. Such notice to Landlord shall be sent to Flake & Company, Inc. at the current address in Little Rock, Arkansas, or any other person designated in writing by Landlord to Tenant. Such notices sent to Tenant by Landlord shall be sent to Tenant at its mailing address in Building, or any other person designated in writing by Tenant to Landlord.

39. *Other Agreements.* This Lease and Rules and Regulations contain the entire agreement of the parties hereto with respect to the matters contained herein and no other representations, promises or agreements, oral or otherwise, have been made between the parties. Submission of this Lease for examination does not constitute a reservation of or option for Premises. Lease becomes effective only upon execution and delivery by both Landlord and Tenant and approval by Landlord's mortgagee where such approval is required. All exhibits and riders attached to this Lease and initialed by Landlord and Tenant are incorporated and made a part of this Lease.

40. *Time.* Time is of the essence in this Lease.

41. *Captions.* The captions used in this Lease are for convenience only and do not in any way limit or amplify the terms and provisions hereof.

42. *Option for Extensions.* Provided this Lease is in full force and effect, Tenant shall have the right to extend the term of this Lease at the end of the initial term for a first extended term of eight (8) years, provided Tenant shall notify Landlord in writing not less than thirty (30) days prior to the expiration of the initial term that Tenant desires such extension and provided further that such extension shall be upon the same terms, provisions, covenants and conditions as are contained in this Lease, except as to the duration of the term of the extension. If Tenant shall have exercised its option for the first renewal term pursuant to the provisions hereof and if the Lease shall be in full force and effect, Tenant shall have the right to extend the term of this Lease for a second and third renewal term of seven (7) years each commencing on the day following the expiration of the previous term, provided Tenant shall notify Landlord in writing not less than thirty (30) days prior to the expiration of the then existing term and provided further that such extension shall be upon the same terms, provisions, covenants and conditions as are contained in this Lease, except as to the duration of the term.

43. *Option to Purchase.* Tenant is hereby given the option to purchase the Building containing the leased premises located on the real property, described herein, at the end of the initial term of this Lease (eighteen (18) years) and any time thereafter that this Lease or any extension or renewal thereof is in effect, by written notice to the Landlord. If such option is exercised, Landlord and Tenant shall, within ten (10) days thereafter, exercise, execute and acknowledge in duplicate the Offer and Acceptance attached to this Lease as Exhibit "A". However, if Landlord decides to terminate its interest or ownership in the Building after the initial term of eighteen (18) years, it shall have the right to require the Tenant to exercise its option to purchase within thirty (30) days of Tenant's receipt of written notice to the Landlord's intentions. Any other transfer of the Building shall be subject to the Tenant's purchase option.

IN TESTIMONY WHEREOF, the above named Landlord and the above named Tenant have executed this instrument on the day and year set forth in paragraph 1 of this Lease.

LANDLORD:
ARKANSAS MEDICAL SOCIETY
BUILDING LIMITED PARTNERSHIP

By:

TENANT:
ARKANSAS MEDICAL SOCIETY
By: /s/ J. P. Burge, M.D.

ATTEST:
/s/ James R. Weber, M.D.

APPROVED:
/s/ Lloyd G. Langston, M.D.
Chairman, Arkansas Medical
Society Building Committee

The Council met on Sunday, November 17, 1985, at the Camelot Hotel in Little Rock and transacted the following business:

1. Legal Counsel Mike Mitchell discussed model legislation for a program for impaired physicians. Joe Verser, secretary of the State Medical Board, expressed concern about problems with funding such a program. Dr. Verser extended an invitation to a State Medical Board banquet meeting on December 4th in Little Rock at which Dr. Talbott of Georgia will discuss the Georgia program for impaired physicians. Mr. Mitchell received general agreement for his attendance at the function.
2. Joe Norton, Chairman of the Society's Sub-Committee on Aging, presented a form proposed by the American Association of Retired Persons for use by patients in asking physicians to accept Medicare assignment. The Council voted approval of the form as proposed.
3. Chairman Lawson announced his selection for appointment to a number of positions.
 (1) The Council approved the appointment of E. J. Jones of Batesville to the Community Health Consortium.
 (2) The Council approved the appointment of L. J. Pat Bell to a four-year term on the Budget Committee, beginning January 1, 1986.
 (3) The Council approved the designation of F. E. Joyce as chairman of the Budget Committee.
4. The Council voted to have a cash bar at the Council reception during the 1986 annual meeting in Little Rock.
5. Charles Rodgers, a member of the Annual Session Program Committee, reported to the Council on plans for the scientific program at the 1986 meeting. He reported that the program would be worked around the theme "Vascular Disease" and well-known speakers in that field would be used for the program. He indicated that the committee would attempt to arrange sponsorship for the speakers and asked for Council authorization for payment of honoraria not covered by sponsorship. The Council voted to request that in order to allow the program committee to proceed with arranging speakers, the Budget Committee seriously consider authorizing up to $4,000 to cover honoraria for speakers if the committee cannot arrange full sponsorship. The Council was advised that the program committee would not be using speakers from the specialty groups.
6. Chairman Lawson advised the Council that the eighth councilor district now has 618 active dues-paying, active dues-waived, and Life members. The councilor district has been represented by five councilors. The district members had recommended that Warren Douglas be accepted by the Council as an additional councilor for the district.

 The Council voted to use the councilor district's active, dues-paid and Life membership count as of December 31 as the basis for councilor representation.

 The Council voted to accept the recommendation of the councilor district to add Dr. Douglas to the Council with the term being November 17, 1985, to April 20, 1986.
7. The Council voted to refer to the Constitutional Revisions Committee for study and report back to the Council the question of whether the cut-off date for determining county society representation in the House of Delegates should be December 31 or March 1.

The Council went into Executive Session for consideration of the Report of the Search Committee and the Budget Committee. Minutes of the Executive Session are as follows:

John Hestir, Chairman of the Search Committee for an Executive Vice President, reported in detail to the Council about the applicants, the job, and the fact that the committee met with four of the applicants for detailed interviews. He reported that the quality of the applicants interviewed was extremely high. He reported that the committee unanimously agreed that Ken LaMastus was the most qualified candidate and recommended him to the Council. Several members of the Council spoke individually as well, supporting the qualifications of Mr. LaMastus and the Council voted unanimously to hire Ken LaMastus as the new Executive Vice President.

Jim Lytle, Chairman of the Budget Committee, presented the proposed budget for 1986. There was considerable discussion about several aspects of the proposed budget. In general, the Council seemed to feel that the Budget Committee had done an excellent job. The budget was accepted as presented except for the deletion of the 5 per-

cent raise for all of the employees of the Society who would not be moving to Little Rock. It was pointed out that those employees were to receive severance pay, a reward for their commitment to stay on until the Fort Smith office was closed and, based on this fact, the Council approved a motion to delete the 5 percent raise in pay proposed in the budget. The Council voted to give the Executive Vice President the same rate of severance pay as the other employees.

The Council unanimously approved a base salary for the new Executive Vice President, Ken LaMastus, of $55,000 per year. The motion included that this salary would start April 1, 1986.

Ray Jouett reminded the Council that Payton Kolb would be running for the Constitution and Bylaws Committee of the American Medical Association and the Council unanimously voted to support his nomination on a motion by Dr. Jouett. The motion also included a recommendation to the Budget Committee that they budget $500 to $1,500 expenditures to support Dr. Kolb's candidacy.

The Council met on Sunday, January 19, 1986, at the Camelot Hotel in Little Rock and transacted the following business:

1. Approved actions of the Executive Committee of November 25, and December 19 as follows:

 Miss Richmond discussed a proposal by the Annual Session Scientific Program Committee that solicitations for speaker sponsorship include an offer of free exhibit booth space at the convention. The Executive Committee voted to keep speaker sponsorship separate from booth space. Firms sponsoring speakers are not to be provided free booth space. The Executive Committee indicated approval of soliciting pharmaceutical firms, surgical supply houses, hospitals, and hospital corporations for speaker sponsorship.

 Dr. Long discussed renewal of the Society's "Association Professional Liability" policy which expires on December 9, 1985. The quote for renewal reduced coverage by $500,000 and increased the premium from $4,420 to $8,860. There was general agreement by the Executive Committee that the proposal for renewal should be accepted if a better proposal could not be obtained.

 It was the unanimous decision of the Executive Committee to advise the Annual Session Program Committee that they recommended that Senator Dale Bumpers be invited to present the Elvin Shuffield Lecture at the upcoming annual session.
2. Heard the Society President, John Burge, discuss complaints from members regarding the Professional Review Organization. The Council voted to send a special newsletter limited to the subject of PRO denials advising members that case files on denials may be forwarded to the headquarters office for submission to the Medical Services Review Committee.
3. Chairman Lawson advised the Council that Alfred Kahn has indicated he does not wish to continue in the position of Journal editor after April 1986. Dr. Lawson received approval from the Council for the Executive Committee to solicit and screen applicants for the position of Editor.
4. Ms. Kintzel, field representative of the American Medical Association, spoke briefly regarding AMA programs and activities.
5. Steve Schnexnayder of the Medical Student Component Society reported on the meeting of the AMA Medical Student Section held in Washington in December.
6. Joe Verser reported on the interim meeting of the AMA House of Delegates held in Washington in December.
7. Chairman Lawson presented a memorial resolution honoring the late Dr. E. K. Clardy. The resolution was approved for publication in the Journal and transmittal to Mrs. Clardy.
8. Upon nomination of Ronald Bracken of the seventh councilor district, the Council elected Thomas Hollis of Hot Springs to serve the unexpired term of Dr. Clardy. The term expires in April 1987.
9. Lloyd Langston, chairman of the Building Committee, made a brief report on the progress of the new headquarters building. He projected a completion date of April 1.
10. F. E. Joyce, chairman of the Budget Committee, presented the Budget Committee's recommendation on two proposals referred to the committee:

 (1) Approval for authorization of up to $4,000 for the Annual Session Committee

for speaker honoraria if full sponsorship cannot be arranged;

(2) Approval of from $500 to $1,500 in support of Payton Kolb's candidacy for the AMA Council on Constitution and Bylaws.

There being no objection, the proposals were accepted as addenda to the 1986 Society budget.

11. Chairman Lawson presented suggestions from the Constitutional Revisions Committee regarding the membership classification and cut-off date for membership count on councilor and county society delegate representation. After considerable discussion, the Council voted as follows:

(1) The Constitutional Revisions Committee was requested to draft proposed amendments for consideration of the reference committees of the House at the 1986 Annual Session which would establish a cut-off date of December 31 for both delegate and councilor representation for the ensuing year.

(2) The Council directed that no change be made in the present provisions of the Constitution and Bylaws regarding delegate representation for Associate members.

(3) Chairman Lawson raised the question of application of the November 17 action establishing a December 31 cut-off date with regard to the additional councilor granted for the eighth district. The Council, by general agreement, affirmed that Warren Douglas, who was elected at the November 1985 meeting, would serve until the 1986 Annual Session. The election of councilors for the eighth district at the 1986 Annual Session would then be based on the district's dues-paid and Life members as of December 31, 1985.

(4) The Council voted to request that the Constitutional Revisions Committee study the desirability of including Emeritus members in the representation by councilors and delegates and present proposals for consideration of the Reference Committee and House of Delegates at the 1986 Annual Session.

12. Motion was made and the Council reaffirmed its policy of authorizing attendance at the 1986 AMA Leadership Conference by the president, president-elect and five other officers. The motion and Council vote also referred the matter of attendance at the Leadership Conference to the Budget Committee for consideration of an allocation in the 1987 Society budget for the Leadership Conference.

13. Chairman Lawson advised the Council that President John Burge, Immediate Past President Charles Wilkins and he would meet with the Trial Lawyers on February 21st.

14. Richard Pearson encouraged Council members who have problems with Wal-Mart's Review Plus to contact Mr. John Sooter at the Wal-Mart hearquarters in Bentonville.

ADDENDUM TO THE COUNCIL MINUTES

Position Paper on Patient Confidentiality

Patient Confidentiality is a term used to refer to the confidential relationship that exists between a patient and a physician as well as other members of the health care team. It is the private information concerning their medical condition, religious beliefs, social habits, family situation and other personal and private information all of which may have some bearing on the diagnosis and treatment provided. Such information may be obtained by discussions with the patient or through various forms of medical examinations.

An individual has the moral as well as legal right to assume such information will remain confidential and be revealed to others outside the health care team only with express written permission. Such confidential relationship is at the very heart of the physician-patient relationship and knowledge that such would be provided to others could very well result in the lack of confidence and the withholding of adequate information that is necessary to provide good medical care.

The obligation to safeguard patient confidences is subject to certain exceptions which are ethically and legally justified because of overriding social considerations. Where a patient threatens to inflict serious bodily harm to another person and there is a reasonable probability that the patient may carry out that threat, the physician should take reasonable precautions for the protection of the intended victim, including notification of the law enforcement authorities. Also, communicable diseases, gunshot and knife wounds should be reported as required by law.

The concept of confidentiality is addressed in item #4 in the Principles of Medical Ethics which state:

> A physician shall respect the rights of patients, of colleagues, and other health professions, and shall safeguard patient confidences within the constraints of the law.

Computer technology permits the accumulation, storage, and analysis of an unlimited quantum of medical information. The possibility of access to the information is greater with the computerized data system than with information stored in the additional written form in a physician's office. However, this ethical principle applies to computerized records as it applies to any other medical records.

When a physician's services are limited to preemployment physical examinations or examinations to determine if an employee who has been ill or injured is able to return to work, no physician-patient relationship exists between the physician and those patients. However, the information obtained by the physician as a result of such examinations is confidential, and should not be communicated to a third party without the individual's prior written consent, unless it is required by law. If the individual authorizes a release of medical information to an employer or potential employer, the physician should release only the information which is reasonably relevant to the employer's decision regarding that individual's ability to perform work required for the job.

A physician-patient relationship does exist when a physician renders treatment to an employee, even though the physician is payed by the employer. If the employee's illness or injury is work related the release of medical information as to the treatment provided to the employee may be subject to the workers' compensation laws. The physician must comply with the requirements of such laws, if applicable. However, the physician may not otherwise discuss the employee's health condition with the employer without the employee's consent or, in the event of the employee's incapacity, then with the family's consent.

According to the American Medical Association, notes made in treating a patient are primarily for the physician's own use and constitutes his own personal property. However, upon the request of the patient a physician should provide a copy of the summary of the record to the patient or to another physician, an attorney, or other person designated by the patient.

Laws and Regulations

Although there are no statutory requirements of confidentiality in Arkansas, there is a duty of confidentiality recognized by common law. As a general rule, a physician is liable to his patients for disclosure of professional secrets to third persons and a breach of that duty will give rise to a cause of action. Moreover, unauthorized disclosure from a patient's medical record constitutes an invasion of the right of privacy and a breach of the implied contract in the ordinary course of dealing between a physician and patient that information disclosed to the physician will be held in confidence. [61 Am. Jur. 2d *Physicians, Surgeons, Etc.* 169 (1981)].

Arkansas does have statutory requirements as to the reporting of certain incidents. For example, Arkansas laws require the reporting of contagious and venereal diseases, gunshot and knife wounds, child abuse, sexual abuse or neglect or death caused thereby, and adult abuse or death caused thereby and death caused by any violence including suicide and accidents. Failure to report may constitute a crime.

Arkansas Medical Society Position

The Arkansas Medical Society strongly believes that information disclosed to a physician during the course of the relationship with a patient should be confidential to the greatest possible degree. The patient should feel free to make a full disclosure of information to the physician so the physician may more effectively provide needed services. A patient should be able to make this disclosure with the knowledge that the physician will respect the confidential nature of the communication. The physician should not reveal confidential communications or information without the express consent of the patient, unless required by law.

The Arkansas Medical Society believes the interest of the patient is paramount in the practice of medicine, and everything that can reasonably and lawfully be done to serve that interest must be done by all physicians who have served or are serving the patient. A physician who formerly treated a patient should not refuse for any reason to make his records of that patient promptly available on request from another physician presently treating the patient. Proper authorization for use

of these records must be granted by the patient. The medical records should not be withheld because of an unpaid bill for medical services.

REPORT OF THE EXECUTIVE VICE PRESIDENT

C. C. Long, M.D.

This has been a busy and different year. The work of the staff has been divided between the Fort Smith and Little Rock office. In anticipation of the move of all functions to Little Rock at the beginning of the 1986 Society year (after the Annual Session), the Society Journal has been transferred to the Little Rock office and we are working toward transferring several other functions in the next few weeks.

Also during the past year, considerable time has been required in working toward having the new office facilities in Little Rock ready to function by May 1. Additional activities, as well as the usual regular functions of the staff, have resulted in a very busy but challenging and interesting year.

The staffing of the Little Rock office and the transferring of all functions will be a big job for Mr. Ken LaMastus. He has our best wishes and we feel confident of his success. We will be available at any time to help out in making this transfer even after the closing of the office in Fort Smith.

BUDGET COMMITTEE

F. E. Joyce, M.D., Chairman

The Budget Committee submitted the following budget for 1986. The complete budget, as presented to the Council, is available to members upon request.

INCOME

Income	*1986 Budget*
Membership Dues	$527,085.00
Journal Advertising	50,000.00
Booth Income	14,000.00
Annual Session	6,000.00
AMA Reimbursement	5,000.00
Miscellaneous & Rosters	6,000.00
Interest	30,000.00
Specialty Desk	1,400.00
INTRAV Reimbursement	3,000.00
Continuing Medical Education	500.00
	$642,985.00

EXPENSES

Salaries	$247,745.00
Travel & Convention	50,000.00
President's Travel	3,000.00
Taxes	20,710.00
Retirement	25,500.00
Stationery & Printing	12,000.00
Office Supplies & Expenses	20,000.00
Telephone & Telegraph	17,000.00
Rent	84,127.00
Postage	33,500.00
Insurance & Bonds	27,000.00
Auditing	6,000.00
Council Expense	6,000.00
Lobbying Activities	1,500.00
Journal Printing	65,000.00
Annual Session	40,000.00
Winter Meeting	2,000.00
Dues & Subscriptions	6,000.00
Gifts & Contributions	2,000.00
Woman's Auxiliary	1,700.00
Legal Services	36,000.00
Schaefer Lawsuit	25,000.00
Special Committee	2,000.00
Rural Health	500.00
Miscellaneous	7,400.00
Freight & Express	100.00
Office Equipment	69,170.00
Continuing Medical Education	600.00
Moving Expense	3,000.00
Miss Richmond's Early Retirement	3,000.00
	$817,552.00

REPORT OF THE MEDICAL EDUCATION FOUNDATION FOR ARKANSAS

W. Martin Eisele, M.D., President

The Medical Education Foundation for Arkansas is continuing its support of the University of Arkansas College of Medicine with its sponsorship of lectures to the students and faculty by nationally recognized authorities in their specialties. Ten such lectures were sponsored at the school last year.

Members of the Society are reminded that contributions to the Medical Education Foundation for Arkansas are most appropriate as memorials to their colleagues and friends. Such contributions will help in the Society's support of medical education and, of course, are tax deductible.

REPORT ON THE MEDICAL STUDENT COMPONENT SOCIETY

Steve Schexnayder, President

The Medical Student Component of the Arkansas Medical Society has experienced more than a 100% increase in membership in the past year. Membership now stands at 459, which represents approximately 80% of the Medical School enrollment. Officers for the past year were: Steve Schexnayder, President; Susan Rebsamen, Vice President; Kent Nunnally, Secretary-Treasurer; Lance Lincoln, Delegate to the Arkansas Medical Society House of Delegates, and E. J. Chauvin, Alternate Delegate.

A Women's Forum was conducted in the spring of 1985 to allow women students to better understand the situations and problems that are unique to women physicians. Six female faculty members met with approximately fifty students for the luncheon meeting.

The second annual Freshman/Sophomore Picnic was held in August. Under the combined sponsorship with First Commercial Bank, the picnic offered incoming students the opportunity to meet their classmates, those students who had just completed the freshman year and several faculty members. Over two hundred people attended the event.

For the first time in over ten years, the State had a delegate to the AMA's Medical Student Section. The interim meeting was held at Omni Shoreham Hotel in Washington, D. C., in early December. Steve Schexnayder represented the Society at the meeting which focused on the legislative issues affecting medicine and medical education.

Susan Rebsamen conducted an AMA membership drive for incoming freshmen and was successful in recruiting over forty new members for her achievement. She was recognized by the AMA and received a plaque and personalized pen set. A plaque was also presented to the Medical School recognizing her work. Rebsamen represented the State Society at the National Leadership Conference in Chicago last month.

A residency forum was held in February to allow students to talk with residents in the various medical specialties. Residents from eighteen different specialties and sub-specialties met at lunch conferences with students for three consecutive days.

Projects being considered for the current year are AMA membership drives for all classes and an organ donor registration project.

THE ARKANSAS DEPARTMENT OF HEALTH

Ben N. Saltzman, M.D., Director

The Arkansas Department of Health has experienced a very busy year despite a period of severe budgetary restraint. Throughout the year, the Department has endeavored to maintain and even expand services in the face of cut in manpower and materials.

We have been involved in the effort to provide some form of financing for indigent care services. The state-wide maternity problem has caused a severe drain on the State's resources. The Nurse Midwife Program has been expanded, but despite the development of regulations, Lay Midwifery remains a problem which requires resolution.

The highly publicized AIDS development in the United States has required further straining of our resources in the form of establishing a clinic in Pulaski County, the production of a workshop and the dissemination of information state-wide, although it is not yet a serious problem in the State.

The problem of hazardous waste disposal in the State was amplified by citizen reaction to the presence of Dioxin in the Jacksonville area.

Because of a nation-wide vaccine shortage, we experienced a temporary curtailment of the Immunization Program. However, we have recovered from that and are providing vaccines despite the increased costs involved.

Pharmacy services have been expanded in our Health Department clinics to meet legal requirements and provide better services to the people utilizing our clinics.

We have expanded our Health Education Programs and have been promoting wellness as an antidote to disease and injury.

Contamination of groundwater has been a serious concern of our engineers and our people in Environmental Health have worked long and hard with the communities in providing guidance for improvement. Our Sanitarian Services have been very much involved with the improvement of sewage disposal and have, in cooperation with the University of Arkansas, developed several experimental models for testing of alternate methods.

In cooperation with the Department of Industrial Development, we are beginning to upgrade our community health units to provide better facilities and services for the people of the State.

Data Processing has improved to the point where information concerning vital records can be made quickly available, dependent upon need.

We continue to enjoy good relationships with the practicing medical community. Our Board of Health, consisting of 20 individuals, contains eight physicians, seven in practice and the Director who serves as Secretary to the Board. The Director or the Deputy Director, Dr. Stuart Fitzhugh, attends meetings of the Council of the Arkansas Medical Society, consults with the Executive Committee and meets with the Public Health Committee of the Society. The bureau directors and the Director are available for meetings with any of the Society committees.

Our purpose remains, the provision of the best possible health services to the people of the State of Arkansas.

BUREAU OF PUBLIC HEALTH PROGRAMS

Charles McGrew, Director

DIVISION OF HEALTH STATISTICS

The Division of Health Statistics and Epidemiology, the Division of Vital Records, and the Division of Data Processing have been working jointly to develop an automated Vital Records/Vital Statistics System. The first stage of this process was completed in August, when the birth system came on-line. It is anticipated that the death system will be on-line by the end of the year.

The division was extremely fortunate to be able to hire a very highly qualified biostatistician/epidemiologist, Dr. Teresa To. Dr. To received her Ph.D. in epidemiology from the University of Pittsburgh School of Public Health. Dr. To brings to the State the expertise to develop critically needed perinatal data bases.

With the Division's new microcomputer equipment, computer graphics and enhanced data processing capabilities are now available and used extensively. Recently the Division produced its first Health Statistics newsletter. This will be a quarterly feature in which graphics will be widely used.

ARKANSAS DEPARTMENT OF HEALTH MANAGEMENT SYSTEM

This year the Agency completed the major task of integrating various reporting mechanisms. In November, the Arkansas Department of Health (ADH) Information Management System was implemented. This new system records clinical services delivered in local health units throughout the State. Limited demographic data is also collected on patients served.

The new system promotes better management of health care services. This is done by increasing the amount of objective information readily available to state and local administrators regarding service delivery, caseloads, and aggregated patient data.

SECTION OF MATERNAL-CHILD HEALTH SERVICES

Dental Services—Fluoridation Program

The Arkansas Fluoridation Program continued its effort to reduce the incidence of dental disease by promoting, implementing, upgrading and maintaining fluoridation in community water systems. Four additional communities were assisted in purchasing equipment and supplies to implement their fluoridation systems. The Program also purchased a second year supply of chemicals for a four community system to prevent discontinuance. The Fluoridation Coordinator presented promotional exhibits at the Annual Rural Health Conference and Arkansas Rural Water Association and presented programs for seven city councils and at two public meetings with health groups. The Statewide fluoride surveillance and monitoring system was maintained through regular chemical analysis of water samples by the ADH Inorganic Chemistry Laboratory.

Dental health education packets on prenatal and postnatal dental care were developed and distributed to all area hospitals with labor and delivery services. This project was accomplished in conjunction with the Arkansas Dental Auxiliary.

WIC

The Special Supplemental Food Program for Women, Infant and Children (WIC) Program reached an average monthly caseload of 33,500 for FY '85. This represents the largest yearly number of women, infants and children ever served by the program since its inception.

During FY '85 the program worked on conversion of an Automated Food Delivery System to track nutritional risk criteria, track participants by USDA priority system, and indicate high risk

population. The system provides specific prescription food instruments for participants. Although the conversion process has been lengthy, the final system will provide enhanced participant service.

The WIC Program initiated a Pilot Program to assess a more cost effective model of service delivery. Assessment of the Pilot Project will be completed in FY '86.

A vendor compliance unit was established in June, 1985. Initially the unit assesses potential fraud, waste, and abuse of WIC Program Food dollars. After the assessment, vendor monitoring policies will be established to detect and reduce the loss of food dollars. This follows the national WIC initiative to curtail fraud, waste, and abuse by Program vendors and/or participants.

Hearing, Speech and Vision Services

There were 1,669 clinical evaluation services provided in speech-language pathology and audiology. These services are provided to 1,059 children. Children having communication problems were enrolled in therapy services and received 1,652 units (½ hour) of services.

The Infant Hearing Assessment Program is designed to provide identification/screening services for infants found to be at risk for hearing loss. Two-hundred fifty-six infants were screened as outpatients in this Clinic. This past year, screening began in the Intensive Care Nurseries of Arkansas Children's Hospital, Baptist Medical Center and St. Vincent Infirmary. Four-hundred twenty-two infants were screened in these nurseries.

The Hearing and Vision School Screening Program enabled 51,959 children to be screened for hearing problems and 53,961 children to be screened for vision problems, resulting in over 5,000 physician referrals.

Family Planning Program

Family Planning clinics were conducted in all 75 counties during 1985. A total of 44,764 women received family planning services at 96 Health Department and nine contractual clinic sites.

Though a contract with the Arkansas Family Planning Council, sexuality education presentations were made to an estimated 60,000 adolescents in the public schools.

The Annual Women's Health Care Update Conference was attended by 235 Health Department and Arkansas Family Planning Council personnel. The conference was offered to the clinical staff which included clinicians, nurses, social workers and nutritionists.

Eight regional vasectomy clinics were initiated during FY '85, bringing the total number of sites to thirteen. There were 117 vasectomies performed March-August, 1985. Additionally, the agency designated special funds for 300 female sterilizations.

Maternity

With the addition of four new clinics in 1985, the Maternity Program of the Arkansas Department of Health is now providing services to patients in 53 counties and at 67 different sites. The clinic at the Central Baptist Hospital in Little Rock was moved to the fifth floor of the hospital, completely renovated, and furnished with new equipment. Now the staff is able to handle a larger caseload in a more efficient fashion.

During FY '85 the maternity patient caseload increased 15% throughout the State. At the same time, there was a 33% increase in the number of prenatal visits and patient encounters. Several new services were provided to ADH patients. Some of these services were: prepaid prescriptions, use of Immune Globulin D, and other procedures including Glucose Tolerance Tests.

The Healthy Beginnings portion of the Maternity Program continues to flourish in the nine selected counties in East Arkansas. Prenatal classes were held in 17 different schools with approximately 70 pregnant teenagers attending. Prenatal classes were also presented in eight local health units. There were 116 classes with a total attendance of 1,095 maternity patients. Home visits were made to all early discharge mothers and babies. A physical assessment was made and any needed referrals were arranged at that time.

Cost contained deliveries for low risk maternity patients is being achieved through the nurse-midwife program. Five nurse midwives delivered 444 babies during FY '85. A sixth nurse midwife was added to the staff in July 1985, and 500 births are projected for FY '86.

High risk maternity patients are being referred for care to the Regional Medical Center at Memphis. In FY '85, 135 indigent Arkansas women were delivered there.

The formal evaluation of the Healthy Beginnings program is in its final stages. Preliminary reports are expected in January 1986.

SECTION OF ENVIRONMENTAL AND HEALTH MAINTENANCE

Epidemiology

Since AIDS has become the nation's number one health problem, a considerable amount of time is spent consulting with physicians and private citizens about the disease, methods of transmission, and diagnostic tests. As of October 31, 1985, 19 cases were reported to the Arkansas Department of Health. Only eight of these were residents of Arkansas when they initially became ill and saw a physician. The remainder were charged to other states where they had intially sought treatment.

AIDS information material has been distributed to the health units throughout the state and lectures are currently being given to interested groups including colleges and hospital staffs.

Hemophilus Influenza Type B meningitis vaccine was approved during the past year. It is recommended by the Advisory Committee on Immunizations Practices and the Academy of Pediatrics. Unfortunately the vaccine is not recommended for usage until the child is two years old, since the immune response is usually not adequate in younger children. During outbreaks or in Day Care Centers, immunization at 18 months of age is recommended even though the immune response may not be as adequate if the child were immunized at a later date. There were 31 reported cases of HIB meningitis in 1984. Twenty-seven of the cases were in children less than two years of age. The vaccine cost is approximately six dollars a dose and vaccine is not available through the Health Department. Private physicians are encouraged to vaccinate children up to five or six years of age.

The Vertac Chemical Company has stored 20,000 barrels of 24D herbicide waste and 2,700 barrels of 245T waste containing on the average 18 parts per million Dioxin. These toxic wastes are currently scheduled to be disposed of by high temperature burning at Vertac Chemical Company by Environmental Services Corp. (ENSCO) of El Dorado. Trial test burns are underway to prove the adequacy of the ENSCO incinerator before certification and authorization by the Department of Pollution Control and Ecology.

The Graham Road old city landfill in Jacksonville was sampled by the Environmental Protection Agency, and chlorophenoxyacetic acid (36,460 parts per million) was found. Dioxin was found with reading of 2.2 parts per billion. EPA directives have indicated that the dump should be fenced and super fund clean up will be sought. The Center for Toxic Substances and Disease Control at CDC states that there is no immediate health hazard except by direct exposure at the dump.

Currently being investigated is the possibility of run off water flooding nearby residences. Further laboratory testing of soils in residential areas and run off water has been recommended by CDC.

Epizootic Disease

During 1984 there were 101 rabid animals diagnosed in the State. There were 80 skunks, 16 bats, three cattle, one dog and two cats. Fourteen counties were placed on a rabies alert since three or more rabid animals have been diagnosed in the county during the last 12 months. County judges were requested to publicize the rabies situation and to encourage pet vaccination and animal control procedures. There were 172 people required to take the post-exposure rabies treatment as a result of being bitten by a rabid or suspect rabid animal. Consultations on the necessity for treatment and instructions for vaccine administration were provided in each instance. Vaccine was shipped to the treating physician in the most expeditious manner.

Venereal Disease

Reported cases of venereal diseases have increased during the first nine months of 1985 compared with the same time frame in 1984. A total of 425 early syphilis cases (a 50.1% increase) and 8,159 gonorrhea cases (a 5.1% increase) have been reported. Rapid epidemiologic follow-up of all syphilis cases has occurred despite this increase in caseload. A reduction in reported cases of penicillin-resistant gonorrhea (PPNG) from nine to three has occurred during this same time frame.

In August, 1985, an alternate screening site for HTLV-III testing (AIDS antibody) was opened at the Pulaski County Health Department. This service is offered to deter high-risk individuals from blood donation facilities and to provide risk reduction counseling to individuals at risk of being exposed to the AIDS virus. Through October 22, 1985, 51 individuals have been tested and counseled, with nine having positive tests. Additionally, 59 specimens submitted by private physicians have been tested with five positive tests reported.

Immunization Program

Hospital-Based Maternal Education Program

The hospital-based Maternal Education Program is currently operational in all the 78 hospitals and clinics in Arkansas that have maternity facilities. Approximately 27,000 new mothers were contacted in 1985 by auxiliary members, nursing staff or other hospital personnel. They were provided with record cards and with information on immunizations. The importance of beginning the immunization series early was stressed in individualized sessions with the parents.

A prime objective of the Maternal Education Program this year was to develop an immunization follow-up tracking system in each hospital. There are currently 45 hospitals participating in follow-up programs consisting of phone calls and/or post card mailings to encourage parents to have their infants immunized on schedule. To evaluate the follow-up program, a controlled, prospective analysis is planned to correlate children enrolled in Arkansas Immunization Reporting System (AIRS) with children born in hospitals with Maternal Education Programs. By studying the average age at which children first enter the health delivery system in hospitals with and without follow-up programs, it may be possible to assess the impact of this follow-up activity.

School and Day Care Surveys

The 1984/1985 School and Day Care Facility Survey provided the following results:

Kindergarten-First Grade

Vaccine Category	Percent Immunized
Polio (3+ doses)*	96
DTP/Td/DT (3+ doses)*	96
Measles	99
Rubella	99
Mumps	97
Combinations	
P(3+), DTP(3+), M,R	96
P(3+), DTP(3+), M,R, MPS	Unknown

*At least one dose after fourth birthday.

Preschool Children

Vaccine Category	Day Care % Immunized	Head Start % Immunized
Polio	94	96
DTP/Td/DT (3+ doses)	96	97
Measles	94	98
Rubella	93	98
Mumps	91	98
Combinations		
P(3+), DTP(3+), M,R	92	96
P(3+), DTP(3+), M,R, MPS	Unknown	

Blood Alcohol Program

Legislation was introduced and passed in 1985 which impacts upon the Blood Alcohol Program and the testing of DWI suspects statewide. It accomplished two things: 1) eliminates all manually operated breath-test instruments effective March, 1989, and 2) authorizes the Department of Health to effectively restrict the types of instruments used in Arkansas. The Blood Alcohol Program is currently evaluating newer equipment for breath testing.

Tuberculosis Program

The Tuberculosis Program of the Arkansas Department of Health conducted approximately fifty Chest Clinics monthly throughout the state for out-patient care during the State Fiscal Year 1985. Approximately nineteen Chest Conferences were held to review medical records of hospitalized tuberculosis or tuberculosis suspect patients to determine each individual's course of treatment and to decide if the patient is accepted in the tuberculosis program. There are 16 hospitals contracted to treat tuberculosis patients. The State Health Department paid $244,517 for the treatment of 181 hospitalized tuberculosis patients with an average hospital stay of 12 days.

The Program Director's analysis of 31,421 nursing home residents in Arkansas for tuberculosis was published in the June 6 *New England Journal of Medicine*. A considerable risk of the disease among elderly persons has been documented and shown to be increased another fourfold among elderly persons who are in nursing homes. The importance of initial tuberculin skin testing of new nursing home residents was clearly shown. Even in homes in which no case of TB had been recognized, the risk of converting from negative to positive on tuberculin skin test was considerable. The risk of converters on the skin test developing TB was at least six percent, which considerably exceeded the risk of giving preventive therapy with INH to converters. The great frequency of unrecognized TB in such elderly persons formed the basis of a new regulation. This calls for the *nursing home* to submit a sputum for TB on any resident who gets sick enough with pneumonia or bronchitis to require transfer to hospital or treatment with an antibiotic.

An outbreak of tuberculous infection and resultant tuberculosis occurred in an Arkansas hospital in January, 1985. The source case appears to have been a patient with a large tuberculous abscess on one thigh which was drained and subsequently irrigated on many occasions with aid of a WaterPik. A total of about 65 personnel were infected (converted PPD skin test) and from these nine clinical cases were found. All have been treated appropriately and most have now completed therapy. The epidemiologic study is still in progress, with the aid of the Tuberculosis Branch, Centers for Disease Control.

Hypertension Program

In conjunction with the Coordinating Council for High Blood Pressure, the Hypertension Control Program sponsored National High Blood Pressure Month in Arkansas during May, 1985. Public Service Announcements (PSA's) were produced featuring Lt. Governor Winston Bryant as spokesperson. Nationally produced PSA's were also run on the three major network television stations out of Little Rock. Promotional packets were made available to 65 groups who planned blood pressure activities. Over 10,000 people were screened and 21% exhibited elevated blood pressures. Coordinating Council volunteers later contacted these people by phone or letter and encouraged them to seek medical care for their blood pressure.

To honor Coordinating Council volunteers for their support during the years, the Second Annual Recognition Luncheon was held in May at the Arkansas Heart Association Building. Over forty individual volunteers and groups were recognized for their outstanding service in community hypertension control activities. Lt. Governor Bryant presented the keynote address. Special guests included eight residents of Riley's Oak Hill Manor Nursing Home who diligently complete the Coordinating Council's follow-up letters throughout the year.

Home Health

Medicare's cost containment measures often result in early discharge and more sophisticated care in the home. Delivery of hi-tech care necessitated more specialized training for Home Health nurses during 1985. The training covered chemotherapy, IV antibiotic therapy, TPN, and other specialized procedures which were uncommon in the home setting one or two years ago.

Coordinated care is one of the key elements in helping the patient regain independence. The Home Health Program began efforts during 1985 to closely coordinate care at home with hospitals and physician groups.

A new computer billing and information system strengthened the program's third party cash flow, and resulted in more comprehensive management information in early 1985.

Aid to Families of Dependent Children/ Homemaker Home Health Aide (AFDC/HHHA) Project

The purposes of this project are to train and channel AFDC recipients into the work force and to provide home care for clients who are otherwise ineligible for other programs.

The AFDC/HHHA Project is now at its peak. Four-hundred seventy-nine clients are served by 115 aides, 11 Nurse Coordinators and a central administrative staff of four. This represents a 75% increase in client population and less than 50% increase in staff for the year.

This project appears to have benefited many people. Most clients have expressed an overwhelming gratitude for the opportunity to retain their independence in their own environment. There also are numerous "success stories" concerning the aides. After finishing their subsidy, many have procured permanent employment or have gone on to further their education including obtaining their GED's.

Although this project is successful in the eyes of the participants, it will end June 30, 1986, due to having been a three (3) year federal demonstration project.

Refugee Health Program

The Refugee Health Program and Social Services co-sponsored four statewide refugee conferences this year for anyone working with or interested in refugees. National speakers presented one workshop on Crisis Intervention and Mental Health.

During FY '85 the Refugee Program has been developing a Refugee Mutual Assistance Association for refugees to help each other. Once nonprofit status is obtained, it will be eligible for funds from Social Services. The Program also assisted the Episcopal Diocese in developing a refugee program.

Emergency Medical Services (EMS) Program

Standards and training requirements for certification of Intermediate Emergency Medical Technicians were developed and implemented in 1985. These permit training in the more sophisticated procedures.

The law changed to allow Advanced Rescue Licensure. The Office of EMS is currently developing standards for operation and training. This service license is restricted to certain agencies and will allow paramedic level care to be rendered in areas not having Paramedic licensed ambulance service.

Now individuals seeking Arkansas EMT certification at any level may choose between the state written exam and the National Registry written exam. A reciprocity agreement has been signed with Oklahoma and agreements with other states are being negotiated. Both of these measures allow EMTs to transfer to other states more easily.

BUREAU OF HEALTH RESOURCES

A. Stuart Fitzhugh, M.D., Director

DIVISION OF PHARMACY SERVICES

The Division completed a Statewide Program to provide for onsite Pharmacy Services in each of the public health units. Each unit has the services of a local Consultant Pharmacist to assure accountability and assessibility of medication used by patients of the health units. The Division's Drug Control Section was responsible for the destruction of over three million dose units of narcotic and dangerous drugs submitted for destruction by hospitals, long term care facilities, physicians, dentists, veterinarians and police.

Over three hundred individual investigations of legitimate drug handlers were conducted, resulting in Licensing Board action against thirty-five. Sixty-seven cease and desist orders were issued in health fraud cases.

The Division provided training for University of Arkansas College of Pharmacy senior students who each served a five week rotation.

Personnel of the Division assisted and provided consultation to state boards and agencies and federal agencies in matters pertaining to drugs, cosmetics and medical devices and the laws and regulations involved in their handling. The Director of the Division served as an advisor to F.D.A. and D.E.A. and attended meetings regarding drugs of abuse at their request.

OFFICE OF POLICIES AND PROCEDURES

During 1985, the Office of Policies and Procedures conducted fifteen training sessions on "Writing for Manuals" and provided technical assistance to numerous individuals who were writing materials for the ADH Policies and Procedures Manual. Technical assistance was also provided to individuals preparing transmittals and memos.

The Office coordinated and distributed approximately ninety transmittals (Manual changes) and over 120 Agency-wide memorandums.

A major accomplishment was the coordination and development of two new volumes of the ADH Policies and Procedures Manual. These volumes are the ADH Information Management System and Patient Care Services. The Patient Care Services Volume is of particular importance because it contains policies and procedures which pertain specifically to clinic operations and patient care.

An ongoing project is the development of a Laboratory Services Volume, which will be completed and distributed in mid-1986.

DIVISION OF PUBLIC HEALTH NURSING

During 1985 the division's use of video equipment expanded into an entirely new and exciting area, that of patient education. Local providers are featured teaching patients the basics in Family Planning and Maternity Clinics. This has been a time-saver for nurses and has kept the education on a very personal basis. Because the local health units made such profitable use of this media, additional equipment is being purchased locally with donations, bake sales, and craft sales. Additionally, the video tape equipment continues to be used for professional inservice. Approximately 75 tapes are available for the professionals to view at local conferences or in their units.

The performance evaluation standards in place in 1984 were revised to fit the Agency format. The experience of using the standards for the past year and a half is proving invaluable as the division looks forward to 1986 requirements.

The nursing procedures for the Patient Care Services volume of the manual were completed and are ready for review and implementation. The production of Clinical Standards will be a carry-over goal for 1986.

DIVISION OF NUTRITION SERVICES

Nutritionists became more involved this year with providing nutrition education and consulta-

tion to community and health related groups. They continued to counsel maternity, child health and WIC participants in health department clinics.

Presentations were made to a broad spectrum of groups. One nutritionist led the nutrition portion of the statewide conference on Health Promotion for Older Arkansans. Nutrition workshops were provided to Area Agency on Aging groups in Batesville and Jonesboro. One nutritionist provided nutrition assistance and education at the Diabetic Youth Camp. Nutritionists participated in clinic teaching videotapes concerning breastfeeding and maternal care.

Nutrition staff served on advisory groups for Headstart, the Red Cross, and Aging Agency groups. Three nutritionists were active in providing county fair exhibits. Presentations were made at private industry wellness groups and at a school health conference.

Food faddism and food fraud questions are often directed to the Nutrition Division and nutrition education efforts to combat these problems are increasing. Five leaflets were revised or developed this year in cooperation with the WIC Program and/or the Division of Health Education and Promotion. One is on good dietary practices, with suggestions on how to obtain correct nutrition information, one encourages good eating patterns for older adults, and the other three are related to breastfeeding.

The Division of Nutrition Services and the Children's Medical Service of Department Human Services have met periodically since June to assess need for nutrition services to certain patients of the Children's Medical Services. It is hoped that services can be implemented within the next calendar year.

OFFICE OF ENVIRONMENTAL TRAINING AND PROFESSIONAL DEVELOPMENT

This office provides in-service training and continuing education for both Central Office and field environmental personnel. Workshops which ET&PD coordinated, presented, or assisted in coordinating were: Providing Proper Criticism and Discipline, How to Work with People, Team Building, Positive Reinforcement, CPR, Use of ADH Telephone System, Supervisor's Guidelines for Training a New Sanitarian, Discipline without Punishment. The Sanitarian In-Service Training Program was revised. Eight new sanitarians were trained under the new program and one new sanitarian supervisor was oriented. Four environmental newsletters were published and distributed. The office monitored CDC study courses for twenty-five Agency employees. The staff development coordinator and/or health educator attended annual Health Education Conference, National Environmental Health Association annual conference, Arkansas Society of Professional Sanitarians annual conference, Arkansas Public Health Association annual conference.

The Office of Environmental Training and Professional Development also provided training and information for the public. The office presented or assisted sanitarians/environmental personnel with 75 presentations/workshops. Among those were: Safe Food Handling Practices, Environmental Health Overview for Resident Physicians at Texarkana, Bicycle Safety, Food Spoilage Prevention for Occupational Health Teachers, and Prevention of Disease Causing Organisms. Other materials were provided to several counties for county fair displays. For the Johnson County Fair, the health educator prepared a poster, developed a slide program, and wrote and tape-recorded a script. This display earned a Blue Ribbon Award. Brochures were distributed for all local health units through the sanitarians.

The office prepared and distributed news releases on environmental topics, such as safe holiday food handling, water well disinfection, dog bite/rabies, septic tank permits and cleaning. A news release on the Low-Level Radiation Waste Disposal Compact was distributed and a new conference was coordinated.

The office worked closely with the Arkansas Consumer Product Safety Representative in coordinating news information and public responses on the meetings on all-terrain vehicles. The health educator wrote and released news releases about the meetings, took phone calls from the media, acted as liaison between Washington and/or Dallas CPSC and local media, and took telephone statements from the public. Another project which ET&PD coordinated for CPSC was an open house/press conference to announce the official opening of its Resident Post in Arkansas.

During 1985, Environmental Training and Professional Development coordinated the Agency-wide drive for contributions to the Arkansas Flag Garden, a state employee-sponsored project of the Sesquicentennial Celebration. ET&PD also

coordinated the semi-annual blood drives in cooperation with the Arkansas Red Cross.

DIVISION OF HEALTH EDUCATION AND PROMOTION

During 1985 the Division of Health Education and Promotion (HEP) continued its efforts to encourage Arkansans to adopt healthful lifestyles. Besides providing resources and assistance to all agency divisions and programs, the HEP staff initiated several projects to make more people aware of the value and cost-effectiveness of health education and promotion activities. Some of these activities include:

1. Nursery Equipment Safety Program: HEP secured a mini-grant from the Consumer Product Safety Commission to conduct educational programs on nursery equipment safety for new parents, pregnant couples, and child care workers. Through classes, demonstration, health fairs, and workshops, 960 persons were reached.
2. State Health Education Conference and Governor's Award for Health Education and Promotion: HEP sponsored the Second Annual State Health Educators Conference in Little Rock last September with over 200 health professionals in attendance. The first recipients of the Governor's Awards for Health Education and Promotion, given in the three categories of school, worksite and community programs, were recognized at this meeting.
3. Health Directions Newsletter: In January, HEP began publishing a quarterly newsletter which is distributed to over 700 health professionals across the state. The newsletter provides information on resources, events, programs and current issues in health education and promotion.
4. School Health Workshops: In October, School Health Workships were sponsored in three management areas reaching over 250 school personnel. The purpose of the workshops was to foster cooperation between the schools and local health units and to update teachers, counselors, nurses, and principals on health department services. Due to the success of these workshops, HEP will support future workshops.

In addition to these special projects, the Division continued to support agency priorities with educational and promotional efforts. An important accomplishment for the staff was the publication of a new Film and Resource Catalog which lists the pamphlets, films, filmstrips and other audio-visuals available from the Division's Resource Center. This catalog will be distributed to every local health unit and to over 700 community organizations. In 1985 HEP distributed over 40,000 pamphlets and filled requests for over 2,500 audio-visuals.

The health educators also conducted over 60 training sessions for school health nurses, PTA members and others, enabling them to give screenings at local schools.

The HEP staff also developed 14 promotional packages (including 17 news articles, 134 public service announcements, one interview script, five posters, and over 70,000 copies of 15 handouts) for distribution by 107 local health units and area offices. Other promotional materials were distributed directly to physicians and to the local media.

The Division's commercial artist prepared the layout and finished artwork for more than 30 pamphlets, newsletters, posters, programs and other visual materials and provided assistance with graphics on numerous other assignments for 18 divisions and programs within the agency.

Health educators worked at local health units in five areas, supporting Well Child, Maternity, Family Planning and Healthy Beginnings clinics with educational classes. In addition, HEP staff members gave numerous educational presentations to local community organizations and represented the agency on many boards and committees.

DIVISION OF MEDICAL SOCIAL SERVICES

The Division of Social Services was actively involved in a number of projects for the prevention of child abuse during 1985. Two social workers are on the Governor's Task Force on Child Abuse. Two are chairmen of local county task forces. Three social workers are co-leaders of groups for mothers of abused children. One group led by Agency social workers helps non-abusive parents of abused children. Faculty members William Hall and Gerald St. Denis of the University of Pittsburgh School of Public Health Social Work Division presented a one-and-a-half day staff development session in June. They discussed an epidemiological approach to social work and used child abuse as an example.

The Director participated in planning commit-

tees for the 1985 MCH Social Work Bi-Regional Conference in Philadelphia and the 1986 MCH Social Work Bi-Regional Conference for regions four and six to be held in Dallas. The Director and two other staff were presentors or moderators at the 1985 MCH SW Regional Conference in Atlanta. One of our new social workers was selected to present the results of a research project at the 1985 National Social Work Professional Symposium in Chicago.

In September, a staff social worker and a graduate student began SHARE, a support group for parents experiencing perinatal loss. Two graduate students are in our division 16 hours a week from September through April participating in clinics and other activities.

BUREAU OF ENVIRONMENTAL HEALTH SERVICES

Jerry G. Hill, Director

DIVISION OF ENGINEERING

The Division of Engineering is responsible for administering the Safe Drinking Water Act, Water Supply Supervision Program to provide better water quality to the public. The evaluation from the Environmental Protection Agency noted that the Division's compliance rates surpassed all national compliance targets. An automated compliance reporting system for the community and non-community programs is being developed.

The Division assisted the Arkansas Industrial Development Commission (AIDC) with the review of water and sewer grant applications for portions of the Small Communities Development Program. Through this program nine water and nine sewer applicants received funding for new water/sewer systems or improvements to existing systems.

An extensive dye study to determine possible ground water contamination from Green Forest sewage treatment plant effluent was undertaken. Results indicated up to twenty shallow individual wells and springs may be contaminated by sewage effluent. The Division worked closely with funding agencies and was able to secure sufficient grant monies to install a water supply to serve the affected area. The Division assisted the city in receiving $500,000 from AIDC to upgrade their sewage treatment plant. A dye study is also being conducted in the vicinity of the Eureka Springs sewage treatment plant to determine its impact on shallow wells and springs for possible sewage contamination.

The Division is working in cooperation with the Environmental Protection Agency and the Department of Pollution Control and Ecology to resolve questions concerning individual and public water supply contamination around four superfund sites in Arkansas. The most comprehensive investigation involved the city of Jacksonville's abandoned landfills. Results showed no contamination in any of Jacksonville's water supply wells. Although, the water quality of the groundwater in some areas is extremely acidic and is causing plumbing fixtures to corrode. The initial report on samples taken at the Newport Industrial Water System by an EPA contractor indicated the water supply may be contaminated. Subsequent samples by EPA and this agency showed the initial report to be erroneous. However, EPA was not satisfied with the quality control levels of the contract laboratory, so resampling will be done.

The Plumbing and Natural Gas Section of the Division of Engineering worked with the State Apprenticeship Committee to establish twelve new apprenticeship schools throughout the state. A test was devised to assist the local Apprenticeship Committees in evaluating the plumber apprentice.

Through joint coordination with the Department of Energy, the Solar Hot Water and Hydronic Hearing System testing and licensing went into effect in August 1985.

DIVISION OF HEALTH FACILITY SERVICES

In 1985, this Division continued to certify beds as "Recuperation Center Beds" and "Swing Beds". These relatively new categories of beds provide alternative to skilled nursing care to Medicare patients. There are now over 400 such beds licensed/certified in Arkansas.

The number of Health Maintenance Organizations (HMO) continued to grow. Health Facility Services reviewed and approved five HMO plans during the past year, and four plans are in the process of being reviewed.

Two Psychiatric Hospitals were licensed in Arkansas during 1985. One of these, Rivendell, located in Benton, Arkansas, is the only facility in the nation to treat only adolescents. The other new facility is Pinewood, which is located in Texarkana, Arkansas.

Two hospice facilities were federally certified.

One was state certified, and one was given temporary certification.

DIVISION OF PUBLIC HEALTH LABORATORIES

Limited funding was provided by the U. S. Department of Health and Human Services Centers for Disease Control to establish a demonstration project for Acquired Immune Deficiency Syndrome (AIDS) testing and counseling. On August 1, 1985, the Division of Public Health Laboratories began accepting specimens for HLTV-III (AIDS) antibody testing. This testing involves two laboratory personnel. As of the first of December, 210 tests were performed with 10% showing positive.

The Division was reviewed by officers of the Environmental Protection Agency for compliance of provisions for the certification of drinking water laboratories. The Division's laboratories certified for three years were:

1. Water Bacteriology Laboratory
2. Organic Chemistry/Pesticide Laboratory
3. Inorganic Chemistry Laboratory
4. Radiochemistry Laboratory

Municipal laboratories were inspected by the Water Laboratory Survey Officer to determine their compliance with standards for performing coliform analysis on public water supplies. Three of the five laboratories were certified. They are:

1. Little Rock Municipal Water Works, Ozark Point
2. North Little Rock Water Department
3. Fort Smith Water Department

DIVISION OF RADIATION CONTROL AND EMERGENCY MANAGEMENT

The Central Interstate Low-Level Waste Compact Commission completed the Site Exclusionary Study. This study excluded all sections of Arkansas, except for seventeen southern and southeastern counties. The Site Selections Study was commissioned and should be completed in 1986. Arkansas is one of five states participating in this study as members of the Compact Commission.

All requirements were completed to meet the Federal Emergency Management Agency standards for acceptance of the Division's emergency offsite response plan around Arkansas Nuclear One at Russellville. It took five years to complete this program, and Arkansas is one of the first states to meet this major goal.

Members of the Hazardous Materials Emergency Response Team responded to a major train derailment outside Pine Bluff in June. The train carried several cars of hazardous chemicals, two of which exploded during the subsequent fire. The Division's response included air sampling in the area in conjunction with EPA, manning a mobile communications center for coordination of field team monitoring data, and providing assistance to local government as described in the State of Arkansas Emergency Operation Plan. All facets of the program responded early and prevented any injuries due to the hazardous materials involved.

Approximately 1,640 x-ray facilities with 3,680 x-ray tubes were re-registered. The majority of these x-ray tubes are in the healing arts field and are the major source of manmade ionization exposure to our public. The Division was also involved with amending, renewing, and inspecting 241 Radioactive Material and Particle Accelerator licenses.

DIVISION OF SANITARIAN SERVICES

Two major milkborne disease outbreaks caused nationwide concern among milk regulatory personnel this year. *Salmonella typhimurium* caused 18,000 illnesses and three deaths from lowfat milk processed in Melrose Park, Illinois. At least 60 deaths outside of Arkansas were traced to cheese that had not been properly pasteurized. The deaths from the California-produced cheese were caused by *Listeria monocytogenes*. The Grade A Milk Program took this time to re-evaluate the pasteurization and processing practices of the Grade A Milk Plants and to educate plant personnel on the proper methods of preventing milkborne diseases. Forty-one milk industry personnel attended a statewide meeting on the "Prevention of Milkborne Disease," which was planned and presented by the Milk Program personnel.

The scores of the check ratings by the U. S. Public Health Personnel were higher than the recommended published rating scores. These scores show an improvement in the inspection of the farms and plants by the Milk Program Specialists.

The interstate milk shippers, industry, state, and federal regulatory people meet every two years to establish laws, regulations and policy on the interstate shipment of milk. Each Program Specialist in the Division worked with an assigned

council or committee to give input to the conference. The Program Administrator was reappointed to council III as a voting delegate.

The Food and Drug Administration Section (FDA) of the Division conducted 394 inspections during 1985. During inspections, 54 samples of food and filth were collected, and 15,689 pounds of contaminated foods valued at $4,280 were voluntarily destroyed by management. Corrective actions accomplished by management in order to comply with existing food laws totaled $127,170.

A comprehensive training program concerning soil evaluations for on-site wastewater treatment was provided for all Area Sanitarian Supervisors. State agencies participating in providing this course were the University of Arkansas at Fayetteville—Department of Agronomy, the Soil Conservation Service, and the Arkansas Department of Health—General Sanitation Section. Courses included site and soil evaluations of 16 counties selected as being representative of marginal soils and conditions encountered across the State. This training was made possible by partial funding approved by the Individual Sewage Disposal System Advisory Committee.

The Individual Sewage Disposal System Advisory Committee also approved funding for the purchase of a total organic carbon analyzer. This equipment will help determine the degree of treatment of sewage effluent produced by various types of experimental sewage treatment systems in use.

The General Sanitation Section processed and licensed 1,434 septic tank installers, 140 septic tank pumpers. Plans were reviewed for 77 swimming pools, 106 subdivisions, and 87 alternate sewage disposal systems.

The Food Section reviewed and approved a total of 1,300 plans consisting of new or remodeled establishments and inspected 20 salvage operations. Approximately 9,000 food service permits and 50 food salvage permits were processed. Four inspections were made on each of the 200 manufactured milk farms throughout the State. Inspections were done on four ice cream plants, three cheese plants and one receiving station.

A new data processing system designed for accounts receivable and inspection reporting was implemented in the Food and Dairy Products Section in 1985. Conversion to this system was 90% completed December 31, 1985. Upon completion of this project, much time will be saved for Sanitarian Supervisors, field Sanitarians and Food Products Section personnel in food service permitting and the auditing of inspection activities.

The Division's three-phase food inspection standardization was two-thirds completed during 1985. The first two phases included certification by the Food and Drug Administration of two Central Office staff, one Pulaski County Sanitarian and 11 Sanitarian Supervisors. The third phase of the program, which includes standardization of all field Sanitarians, was 50% completed in 1985. This Quality Assurance effort will be continued to ensure uniformity in food inspection and interpretations of regulations.

BUREAU OF COMMUNITY HEALTH SERVICES

Nancy Kirsch, Director

The Bureau of Community Health Services (BCHS) is responsible for the administrative direction and supervision of all field services, personnel, and resources through eleven area offices and ninety-six local health units. The following paragraphs delineate the major accomplishments for 1985.

Funds again became available in 1985 through the Arkansas Industrial Development Commission (AIDC) for construction and renovation of public health facilities. The Bureau of Community Health Services chaired a Health Department committee which assisted AIDC in review and evaluation of grant applications for public health facilities. Area management and local health unit staffs worked closely with local government officials and community leaders in preparing the grant applications.

Twelve counties or cities submitted grant applications for construction of new facilities or renovation of existing local health unit facilities. Of these twelve applications, three were approved and one placed on standby in case leftover funds became available. Construction of new facilities was approved for Drew and Nevada counties. Expansion of the Bradley County Health Unit was funded. Construction of a new facility for the Lonoke County (Cabot) Health Unit was placed on standby.

The BCHS, with cooperation and assistance from other bureaus, implemented a new local health unit activity reporting system. Previously there had been numerous reporting systems col-

lecting various and often duplicate information. The new reporting system consolidated the old systems and eliminated eleven previously required reporting forms. This new system represents a significant improvement in the collection and analysis of local health unit service data.

The BCHS, also with cooperation and assistance from other bureaus, implemented job performance standards for field personnel. These performance standards were drafted as a result of recent legislative action that requires annual pay increases be allocated according to merit. The performance standards are tailored to the individual's job within the broad standards established for their professional position; i.e., public health nurse, sanitarian, clerk, etc. These standards should allow for more objective and accurate employee performance evaluation.

Management evaluations were conducted on each of the local health units by either central office or area personnel. Improvements continue to be made in the areas of fiscal accountability, inventory, record-keeping, personnel management, and facilities for the handicapped. However, these evaluations continue to indicate that many local health unit facilities are in need of significant improvements. Many lack adequate space for the staffs housed there and the numbers of patients routinely seen in the units.

The BCHS continued its program of inservice training for its 80 Local Health Unit Administrators. Staff development programs were held in March and October. The October meeting included three workshops and three discussion groups. The discussion groups centered on current agency operations and priorities. The input received from the Administrators during these discussions will be extremely helpful for future agency planning and priority setting.

Many different community health services and programs are offered through local health units. Services that are offered are based on the needs of the community and on available resources. Details regarding these services and programs appear elsewhere in this report.

BUREAU OF ADMINISTRATIVE SUPPORT SERVICES

Tom Butler, Director

DATA PROCESSING DIVISION

During 1985, the ADH computer system was expanded by increasing disk storage and memory. Printer capabilities were improved and 35 user devices were added. This additional hardware enhanced the capability of the ADH computer system to keep up to the demands of the users within our agency.

The programming staff received on-site training for a new Professional Application Creation Environment (PACE) software package. This has given the division the ability to decrease the amount of time needed to complete a given project. As more projects were developed, agency-wide use of the PACE software has allowed the agency to move from a batch mode to the more efficient interactive mode of data entry into the computer system.

The largest accomplishment of this division has been the restoration of credibility. This has come about because the data processing backlog was eliminated in major programs, 13 new projects were started, and 45 requests for service tasks were completed.

Major projects implemented were:

1. Vital Records—birth module installed in July; death module installed in November; and marriage/divorce modules due in February, 1986.
2. The EMS system was revised to accommodate their new data entry form.
3. The WIC system is 90% finished and scheduled to be completed by March, 1986.
4. The agency licensing system has been implemented into ten different licensing activities.

DIVISION OF FINANCIAL MANAGEMENT

During 1985, the Accounts Receivable was computerized to identify revenue sources relating to the Food Service Program and Grade "A" Milk Program. Accountability in this area has been a concern for both this agency and Legislative Audit.

In addition to revenue tracking, the system will identify program needs regarding inspections, renewal notices, and change of establishment ownership.

The Time Allocation System was modified this year to allow for computerization of sampling results. All returned time samples are now entered into the agency data processing system. This information makes the gathering of sampling information possible on an area-wide basis. The area information is useful in determining staffing

requirements and geographic provision of health services.

DIVISION OF VITAL RECORDS

The division developed and distributed the "Registrar's Handbook," which assists local county registrars in administering the Vital Records program on a countywide basis.

As a result of the new field representative's compliance monitoring program, vital records are being filed on a more timely basis.

On July 1, 1985, the division added a data entry section and now has the capability of automated search for certificates. Automated issuance of certificates will be started in the near future. The system provides several management tools to improve the Division's services to the citizens of Arkansas.

The division began accepting payment by credit cards.

PERSONNEL DIVISION

The Personnel Division is approaching the final stages for implementing a revised performance evaluation system. During this year, all managers and supervisors were trained on defining jobs and writing performance standards. The Health Department also produced and distributed a videotape production explaining the new performance evaluation system to all employees.

Computerization of personnel operations is in the planning stages. Completion of the project is projected for July, 1986.

CENTRAL SUPPLY AND SERVICES

The delivery system completed its second year. The system paid for itself in the first year (cost of van and trailer). This year the savings were over $25,000.

The print shop produced over five and one-half million impressions during 1985. This saved the agency over $75,000 when compared to private printing costs.

The agency fuel pump continues to save in vehicle fuel costs. Over 35,000 gallons were used, and the average savings is ten cents per gallon. A savings for the agency of $3,500 was realized when compared to UPS costs.

The supply section maintains over a $1,000,000 stock and has kept this inventory manually. Both computer hardware and software are now in, and the inventory in the future will be automated.



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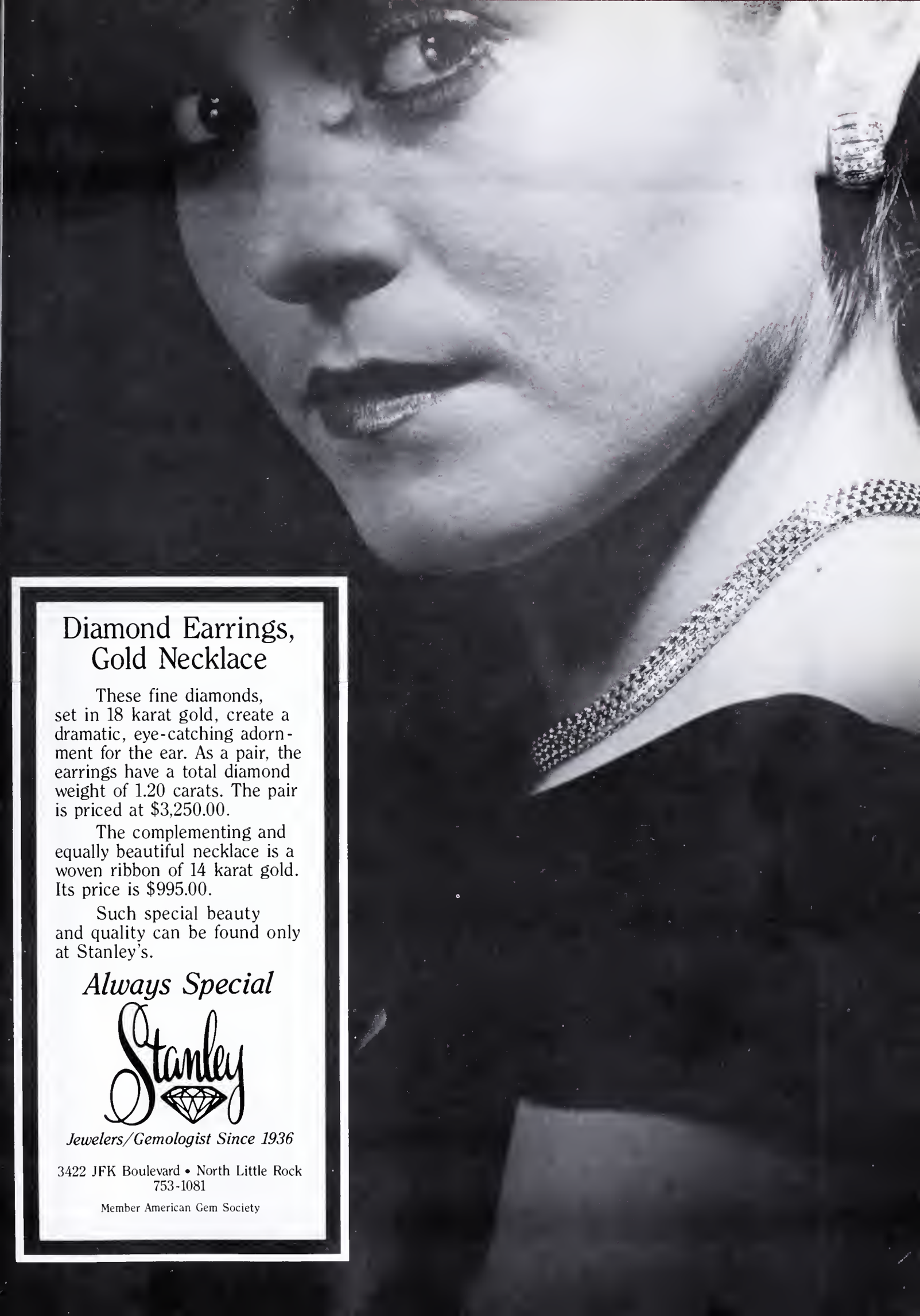
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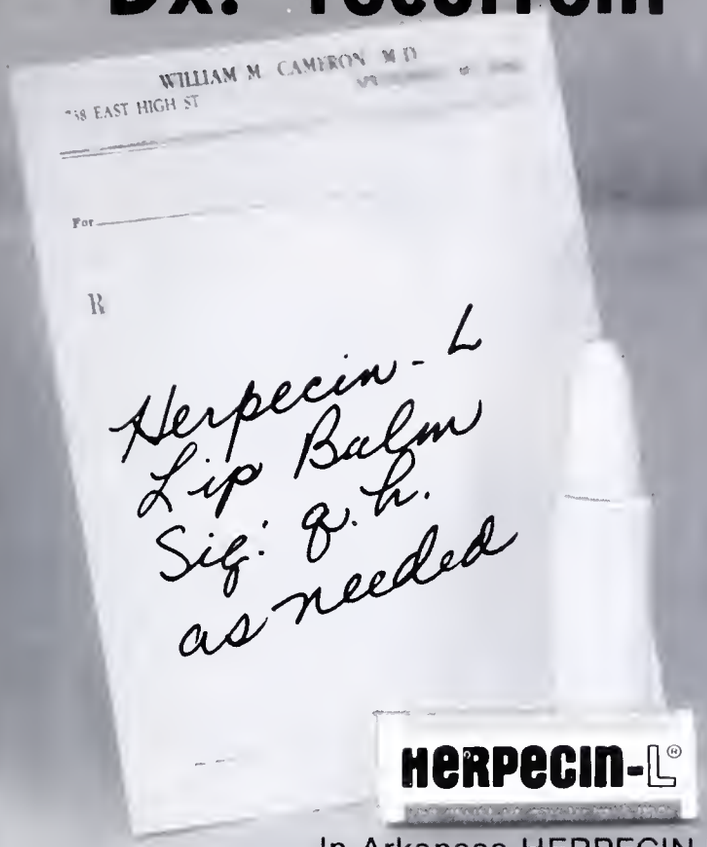
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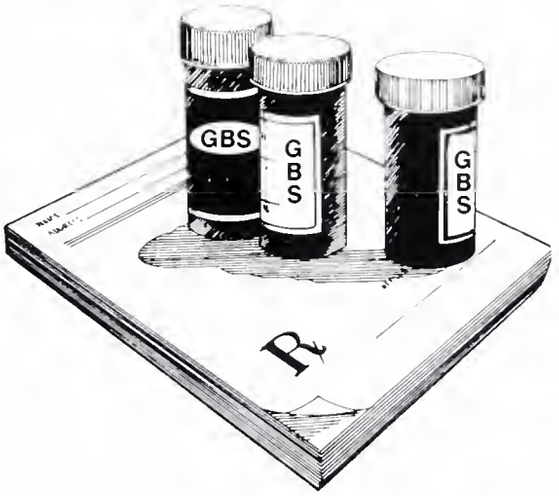
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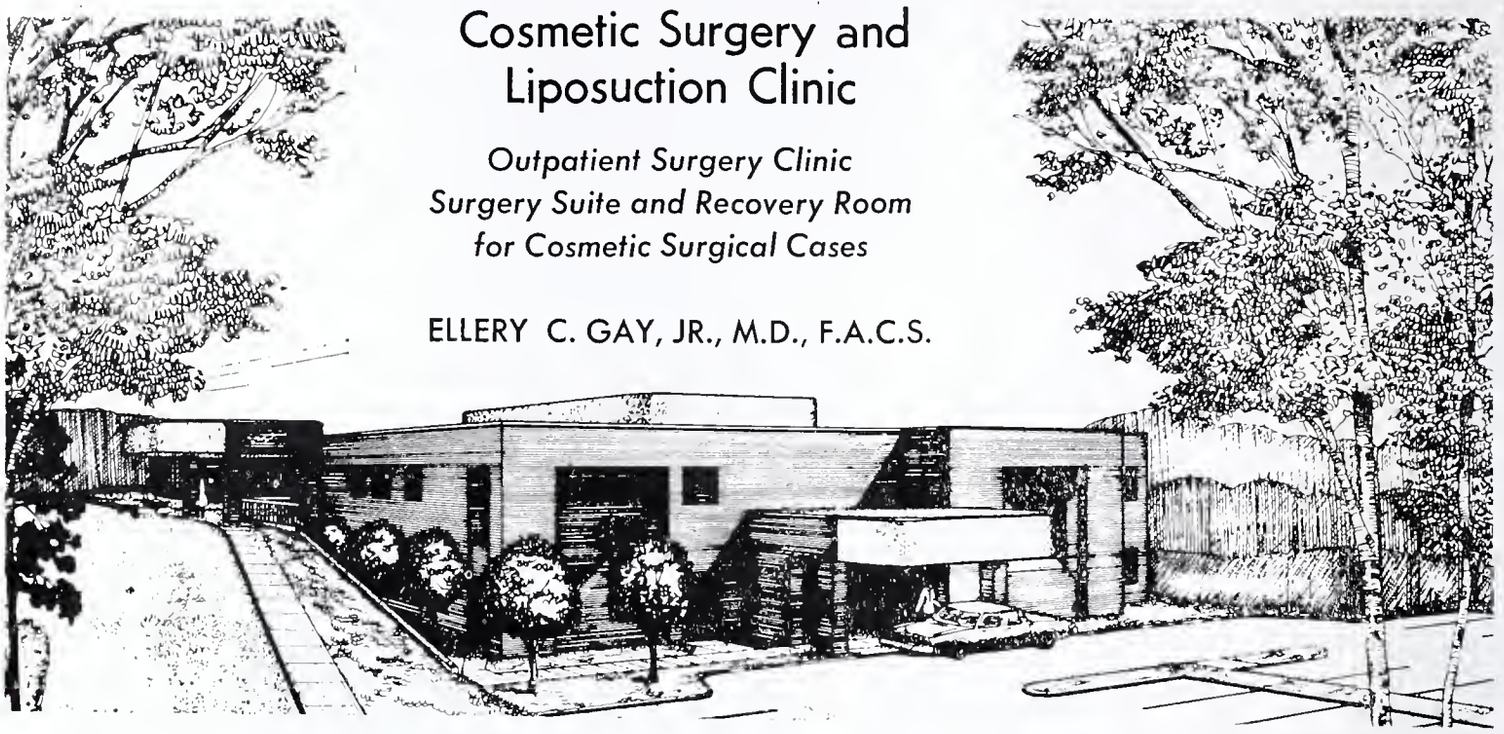
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The Delta Medical Center was acquired by Westworld Health Care, Inc., in 1985. A 28-bed nursing home is at the same location. The hospital serves the residents of Brinkley and draws patients from the entire county as well as parts of Prairie, St. Francis, Woodruff, and Lee Counties.

CHEROKEE VILLAGE. Population 4,500, county population of 14,607, Cherokee Village is located in the foothills of the Ozark Mountains. Opportunity exists for a general surgeon. Financial arrangements will be tailored to meet the needs of the physician. There are currently 3 family physicians in the community. The Baptist Memorial Hospital—Eastern Ozarks is a 40-bed acute care hospital. The hospital has a well-equipped emergency room and a comprehensive range of support services. Tertiary care and continuing medical education are located an hour away in Jonesboro which is the regional medical center for northeast Arkansas.

FORREST CITY. Forrest City is located on Interstate 40, 45 miles from Memphis, Tennessee and 90 miles from Little Rock. Population approximately 13,800; trade area population approximately 70,000. Opportunities exist in internal medicine, obstetrics and gynecology. Financial options are available for qualified physicians. Baptist Memorial Hospital-Forrest City, a full service 118-bed J.C.A.H. hospital with 20 physicians on staff, serves the community.

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PARAGOULD. Population 15,000; trade area 50,000. Paragould is located in Green County in northeast Arkansas. An opportunity exist for a general internist or internist with sub-specialty in gastroenterology or non-invasive cardiology. The area is served by one board certified internist who desires a partner. Practice arrangements flexible and negatiable. Other opportunities are in otorhinolaryngology and psychiatry. The city and county is served by a 129-bed, non-profit, community operated hospital with full facilities including sonograph, gamma camera, cobalt therapy unit and a CT scanner. The latest hospital expansion in 1980 doubled the floor space of the institution. Paragould currently has approximately 25 physicians.

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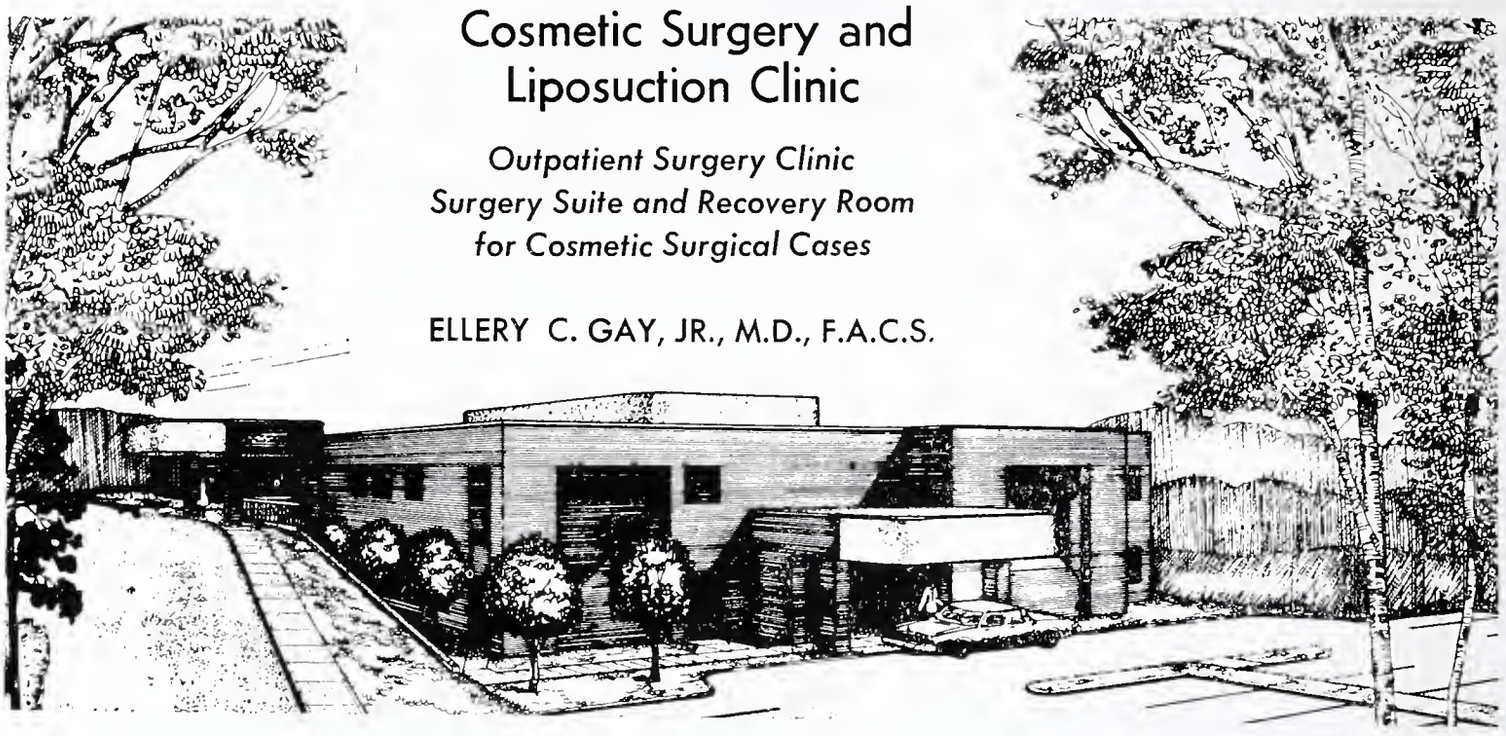


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Before prescribing, see complete prescribing information in SK&F CO. literature or *PDR*. The following is a brief summary.

* **WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: **Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired.** If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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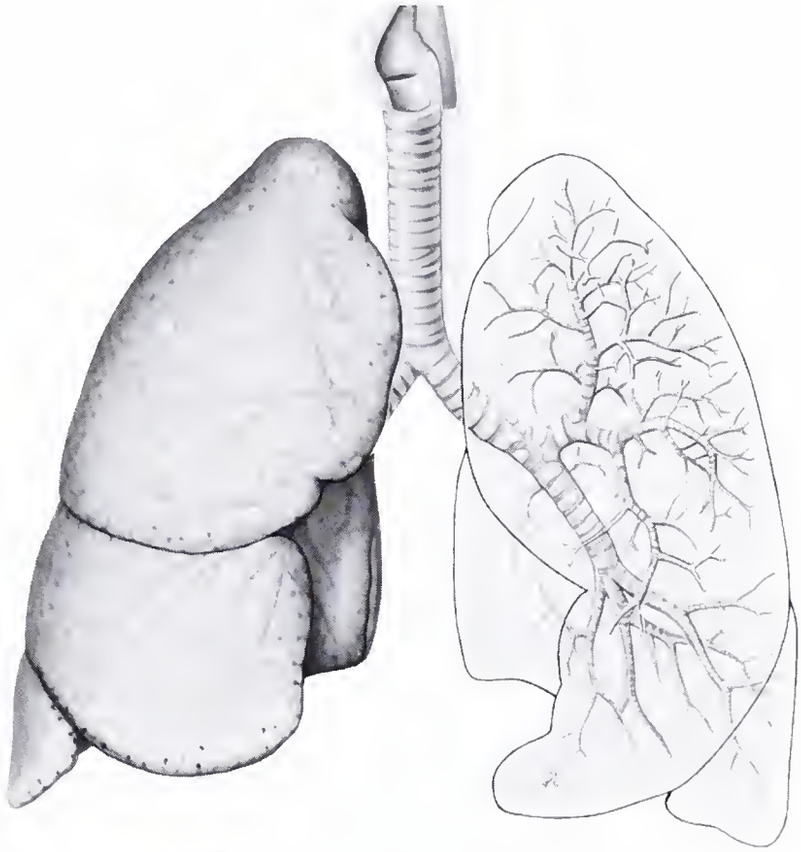
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Brief Summary Consult the package literature for prescribing information

Indications and Usage Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae,* and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

Warnings IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile* Other causes of colitis should be ruled out

Precautions *General Precautions* — If an allergic reaction to Ceclor® (cefaclor, Lilly) occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms Careful observation of the patient is essential If superinfection occurs during therapy, appropriate measures should be taken

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly)

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis

Usage in Pregnancy — *Pregnancy Category B* — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor® (cefaclor, Lilly) There are, however, no adequate and well-controlled studies in pregnant women Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively Trace amounts were detected at one hour The effect on nursing infants is not known Caution should be exercised when Ceclor is administered to a nursing woman

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70)

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100) Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor Such reactions have been reported more frequently in children than in adults Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy No serious sequelae have been reported Antihistamines and corticosteroids appear to enhance resolution of the syndrome

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician

Hepatic — Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40)

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200)

[061782R]

Note Ceclor® (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever See prescribing information

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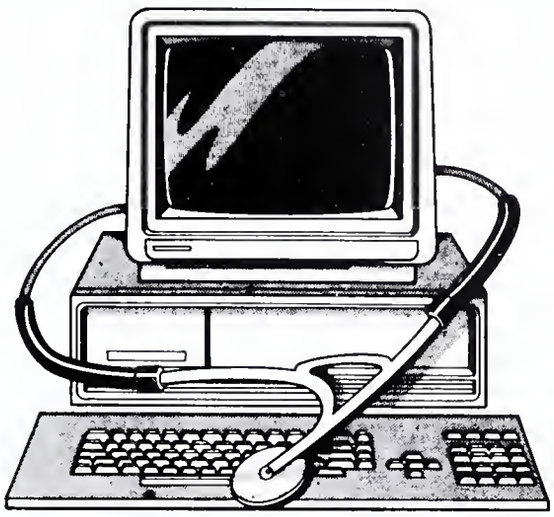
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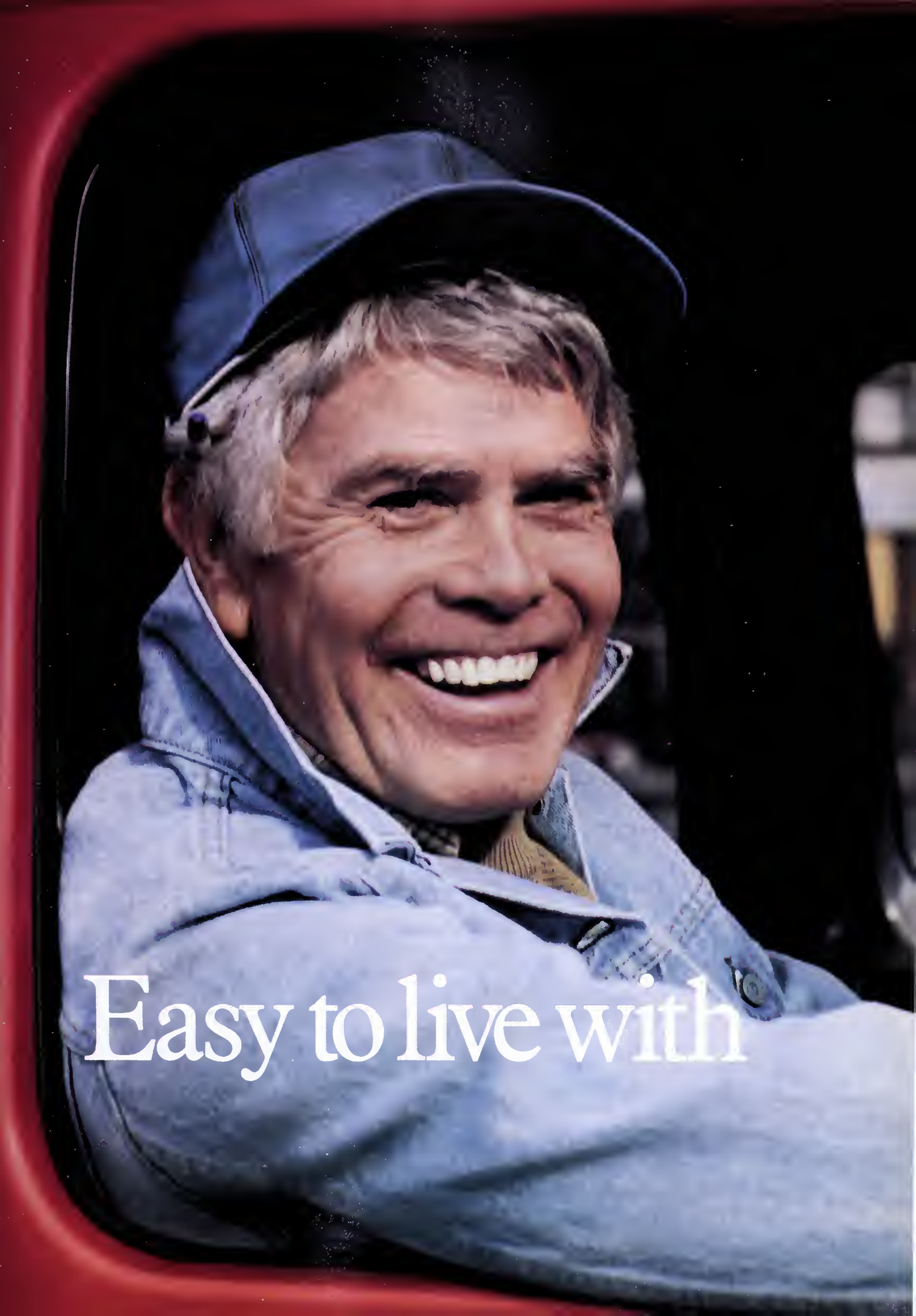
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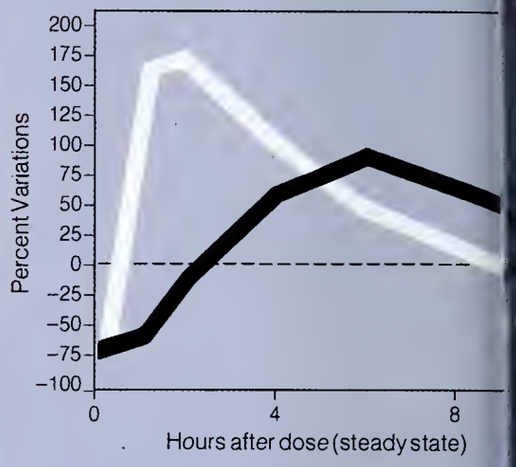
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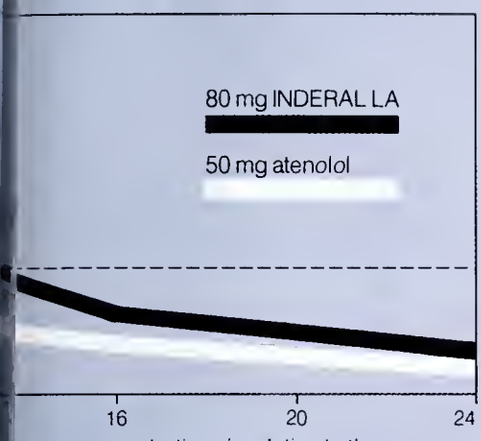
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INDERAL LA AND INDERIDE LA Capsules should not be considered simple mg-for-mg substitutes for INDERAL and INDERIDE Tablets. Please see package circulars.

CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE: Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or propranolol should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA: Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL: Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs, such as reserpine should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY: Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Once-daily INDERIDE® LA

Each capsule contains propranolol HCl (INDERAL® LA), 80 mg, 120 mg, or 160 mg, and hydrochlorothiazide, 50 mg



The appearance of these capsules is a registered trademark of Ayerst Laboratories.

NURSING MOTHERS: Propranolol is excreted in human milk. Caution should be exercised when propranolol is administered to a nursing mother.

PEDIATRIC USE: Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL: Periodic determination of serum electrolytes to determine possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrolyte imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hypokalemia can sensitize or exaggerate the response of the heart to the toxic effect of digitalis (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassium supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, except under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction, rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiazide therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabetes mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diuretic therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland with hypercalcemia and hypophosphatemia have been observed in a few patients on prolonged thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bone resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued before carrying out tests for parathyroid function.

DRUG INTERACTIONS: Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY: Pregnancy Category C. Thiazides cross the placental barrier and appear in cord blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed against possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS: Thiazides appear in human milk. If use of the drug is deemed essential, the patient should stop nursing.

PEDIATRIC USE: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: Pharyngitis and agranulocytosis; erythematous rash; fever combined with aching and sore throat; laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis; nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: Alopecia; LE-like reactions; psoriasiform rashes; dry eyes; male impotence; and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes, and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic jaundice); pancreatitis; sialadenitis.

Central Nervous System: Dizziness, vertigo; paresthesias; headache; xanthopsia.

Hematologic: Leukopenia, agranulocytosis; thrombocytopenia; aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates, narcotics).

Hypersensitivity: Purpura, photosensitivity; rash; urticaria; necrotizing angiitis (vascular cutaneous vasculitis); fever, respiratory distress, including pneumonitis; anaphylactic reactions.

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm; weakness; restlessness; transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced or therapy withdrawn.

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REFERENCES

1. Data on file, Ayerst Laboratories. **2.** Ravid M, Lang R, Jutrin I: The relative antihypertensive potency of propranolol, oxprenolol, atenolol, and metoprolol given once daily. *Arch Intern Med* 1985;145:1321-1323. **3.** Sumiye L, Vivian AS, Frisof KB, et al: Potassium loss associated with hydrochlorothiazide versus chlorthalidone. *Clin Ther* 1981;4:308-320. **4.** Ram CVS, Garrett BN, Kaplan NM: Moderate sodium restriction and various diuretics in the treatment of hypertension. *Arch Intern Med* 1981;141:1015-1019.

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Acute Care for the Violent Patient

Gene W. Reid, M.D.*

Whatever your field of medicine, whether you're a practicing general psychiatrist or a radiologist, there is good likelihood you'll be faced with a potentially violent patient to manage at some point in your career. Predicting violence is not an exact science by any means, and your most important ally will be your own calm objectivity and courtesy. Still, there are some predictors that can be valuable. This article will try to reveal some reliable indications of possible violence, and hopefully offer some solid recommendations as to how to deal with a developing hazardous situation before harm is done.

We'll start with some *diagnostic clues* to impending violence.[1] Often, knowing the patients diagnostic history can be extremely helpful with future management. *Drug intoxication,* especially with alcohol, amphetamines, sedatives, hypnotics, cocaine, PCP, LSD and such, is associated with violent behavior as is any *withdrawal syndrome* associated with alcohol and drugs. *Delirium*, such as that produced by sepsis or medication overdose, is a hazard as are all *post-ictal states* following any type of seizure disorder.[2] Of course, people suffering from *acute psychosis* are at risk for violence as are people who have diagnoses associated with emotionally unstable personalities such as *paranoid personality, antisocial personality,* and *borderline personality disorders.*[3]

Apart from the previous and present diagnoses pertaining to a patient, their general behavior is something to observe for *behavioral clues* to possible violence.[1] The most important behavioral clue is excessive motor activity, especially *pacing.* When a patient is constantly pacing because of emotional or mental agitation, he should be seen immediately. Other behavioral clues include aggressive posture, shoulders forward, angry face, clenched fist—all are possible indications. Rapid, angry, demanding *speech* should be regarded cautiously and the so-called *startle response* is a good indicator. The startle response refers to a patient reacting suddenly and frightfully to a relatively minor stimulus such as the sound of a dropped chart or the surprise of a person standing too close.

Aside from street drugs, there are certain medications prescribed by physicians which can contribute to violent behavior in an otherwise non-violent person, and will increase the risk of violence in people already prone to such. L-Dopa,[4] used in the treatment of Parkinson's disease, will induce agitated, combative behavior in elderly patients if it is titrated too fast and the clinical endpoint is overrun. About 10% of people taking *corticosteroids*[5] at a dose equivalent to 40 mg of Predisone per day or more, are at risk for marked mental changes—the so-called steroid psychosis. Steroids should *never* be prescribed while a person is taking tricyclic anti-depressants. *Anti-depressants*[1,3] are offenders in themselves in people who have schizophrenia and also in normal subjects who don't have a true endogenous depression. Also a hazard toward violence is the class of anti-anxiety agents called *benzodiazepines.*[1] The benzodiazepines can produce rage reactions in individuals through the process called *dis-inhibition.* For example, a man might be angry with his boss and even have fantasies of striking him. The social anxiety associated with loss of job and legal charges, however, might prevent him from doing so. If an unsuspecting physician prescribes an anti-anxiety drug for this man, the net result might be to lower his social anxiety enough that his violent impulses are "dis-inhibited" enough to result in combative behavior.

Alcohol is frequently associated with violent incidents in hospital emergency rooms. Intoxication, pathological intoxication, alcoholic hallucinations, and delerium tremors are all alcohol related disorders associated with violent behavior.

If you are faced with a violent or potentially violent patient, proceed first with *prompt, swift,*

*John L. McClellan Memorial Veterans Hospital, North Little Rock Division, North Little Rock, Arkansas 72114.

intervention. Do not allow an agitated person to continue to pace and shout in the waiting room while you continue to see people in proper order. Tend to the source of possible destructiveness immediately. *Identify yourself*—wear a white coat, a name tag, carry a clipboard or chart—introduce yourself by your formal title (for example, "I am Dr. Jones, this is Ms. Smith our chief nursing assistant, Mr. Beretta our security officer", etc.). Make sure the patient knows you are an official member of the hospital staff and are there to help him or her. Be *courteous* and *respectful*. Say "please", "thank you", "sir", and "ma'am". Stay a comfortable distance from the patient and don't threaten, criticize, or "talk down" to him. Be *firm* without antagonizing the patient, make sure he understands *you* are in charge and do not allow the patient to control the interview or make unreasonable demands. For example, "No sir, I'm sorry we cannot give you a beer or a pack of cigarettes. However, we are here to help you in any way we can. What can we do for you?"

Medication management is done with neuroleptics,[6,7,8] also called "major tranquilizers" or "antipsychotic drugs." A good antipsychotic "cocktail" consists of Haloperidol (Haldol) 10 mg as a P.O. concentrate with Diphenhydramine (Benadryl) 50 mg also as a P.O. concentrate. This is rapidly absorbed and doesn't require the use of needles, which many patients find threatening. Repeat the Haldol 10 mg in 30 minutes as needed. Other useful antipsychotics are Thiothixene (Navane) 10 mg and Fluphenazine (Prolixin) 10 mg, also as a concentrate. Chlorpromazine (Thorazine) and Thioridazine (Mellaril) 50 to 100 mg may be used, though they are more sedating (which can sometimes alarm a frightened, paranoid patient) and have some cardiovascular side effects huch as hypotension, not associated with the first three agents. Of course, if a patient refuses oral medicine, these medications may be given I.M. at the dosages already indicated (except for Thioridazine which can only be given P.O.).

Management of the potentially violent patient consists mostly of good hospitality techniques and medication. First, try to get the person to talk to you and ask "How can we help you?" Often, this will lead to a rapid solution to the problem. If the patient gets sidetracked in the conversation and begins to escalate, ask again, "What can we do for you?" "How can we help you?" Offer food and/or drink. This is a universal gesture of peace and will be appreciated by almost everyone. "Can we get you some orange juice? Would you like a drink of water?" It can often defuse a hot situation very quickly. Offer medicine—"Would you take some medication that could help you relax and feel a little calmer?" Be supportive and helpful in your attitude. Do not behave threateningly or hostile to a potentially violent person. Have a "show of force" of security personnel present whenever possible while confronting a hostile, potentially violent patient. Restraints should be used as a last resort, but once the decision is made to use them, the decision must be seen through to the end. Once you initiate staff and security personnel to restrain a patient, do not bargain, do not waver, do not stop your efforts until the patient is safely in restraints.

The question of when to order a patient into restraints arises. For this purpose, rely on Dubin's "restraint triad".[1] These are three factors, which when present, justify physically restraining a patient. They are:

1. The presence of an agitated, hostile, potentially violent patient.
2. The patient is escalating, i.e. his behavior is worsening as time passes.
3. No one on staff can establish rapport to de-escalate the situation.

If all three factors are present, the patient should be subdued, restrained, and medicated for the safety of himself and others. Make sure there are at least four people, one for each appendage. Have someone talk reassuringly to the patient while he is being restrained. Use leather restraints specifically designed for this purpose—not bed sheets or other makeshift methods. Have someone stay with the patient at all times while he or she is in restraints and release the patient as soon as they have calmed and rapport is re-established. Be sure to document all restraint procedures fully and accurately.

Finally, if you are attacked, rule number one is *protect your head*. Run away from the assailant and seek help with a loud voice, maintaining maximum distance. Never try to physically disarm a patient and never try to personally interview a patient with whom you are afraid. He will sense your fear and feel even more out of control. If you are very uncomfortable in the interview situation, bring in an assistant or security person with you. Sit next to the door and even leave the door open if you are sufficiently anxious. Remem-

ber, rapport is the most important element in dealing with a potentially violent patient.[9] Be warm, concerned, respectful and courteous, and remember to ask, "How can we help you?"

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A History of Anesthesiology in Arkansas

Richard B. Clark, M.D.*

The occasion and circumstance of the administration of the first anesthetic in Arkansas is unknown; it is lost in the mists of time and distance. It must have been after October 16, 1846, which is the date of the first administration of ether anesthesia, in the Massachusetts General Hospital in Boston, by W. T. G. Morton, a dentist.[1] Probably the significance of the first anesthesia given in Arkansas was unappreciated by the participants, as the administration of anesthesia anywhere at that time was approached casually. It was not until the 1920's that this discipline was considered worthy of the full-time attention of physicians.

The administration of anesthetics in Great Britain has always been performed by physicians (unlike this country), but even there it was often considered one of the many duties of the general physician. Until fairly recent times, anesthesia was administered in the United States of America by general practitioners, nurses, or the junior member of the surgical team, as depicted in Eakins' famous painting, "The Agnew Clinic".[2] The first full time anesthesiologist in Arkansas did not appear until 1930.**

No doubt, this early casual approach to anesthesia also occurred in Arkansas. Physicians, practicing medicine and surgery, administered anesthesia when circumstances dictated, and their inclinations drew them in that direction. The agents they used were ether and chloroform. Chloroform was much less irritating than ether and provided a rapid, smooth induction. As this agent often produced such disasters as ventricular fibrillation and cardiopulmonary arrest, its use eventually was discontinued everywhere. Ether retained some popularity until the 1960's.

A vigorous search revealed no record of anesthesia in Arkansas during the Civil War. (Here the author makes his first plea for any reader, with any knowledge of anesthesia in Arkansas from the middle of the 19th century to the mid 1930's, to share such knowledge with him). What was found at the library of the University of Arkansas for Medical Sciences, was a six volume set of books entitled, "Medical and Surgical History of the War of the Rebellion", published by the U. S. Surgeon General's Office.[4] Chapter XIII of the third surgical volume is devoted to anesthesia. It was estimated that anesthesia had been used in no less than 80,000 cases during the Civil War. In 8,900 cases, the anesthetics were: chloroform, 76.2%, ether, 14.7%, and a mixture of the two, 9.1%.[4] Since the surgical experience was classified by anatomical site, and not by place, and since the report covers only Union forces, not Confederate, very little can be inferred about anesthetic experiences in Arkansas. Nevertheless, it can be assumed that physicians working in Arkansas at that time also used chloroform and ether when available.

The *Journal of the Arkansas Medical Society* came into existence in 1890, and provides our first tangible glimpse of the use of anesthetics in Arkansas. It was not until after the turn of the century, 1907, that Dr. Thibault, of Scotts (sic), described a new local anesthetic, quinine.[5] Ether and chloroform anesthesia were discussed by Dr. Meriwether of Little Rock, in the same issue.[6] The work of Dr. Charles Venable of Virginia with adrenalin in ether anesthesia was recounted in 1907.[7] Dr. R. C. Dorr of Batesville, published an account of an amputation of a leg under local anesthesia in 1908.[8] "Quinin Anesthesia" was published in 1911,[9] "General Anesthesia" in 1915,[10] and "Tonsillectomy with Local Anesthesia",[11] in 1916. Subsequently, the following items appeared in the Journal of the Arkansas Medical Society: "Synergistic Anesthesia in Obstetrics" (1929),[12] "Spinal Anesthesia" (1931),[13] "A Plea for the Use of Spinal Anesthesia in Selected Cases" (1932),[14] "Analgesia and Anesthesia in Obstetrics" (1940),[15] "Caudal Anesthesia in Proctological Surgery" (1942),[16] "Evaluation of Continuous Caudal in a Small Hospital" (1945),[17] "Office Anesthesia" (1948),[18] "Anesthesia and Early Dentistry in Arkansas" (1954) (published in the Arkansas Dental Journal),[19] (in this, Dr. Dietrich states that the first instruction in performing nerve blocks in

*Professor, Departments of Anesthesiology & Obstetrics/Gynecology; Director, Obstetric Anesthesia, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 515, Little Rock, Arkansas 72205.

Reprint request should be addressed to: Richard B. Clark, M.D., University of Arkansas for Medical Sciences, 4301 West Markham, Slot 515, Little Rock, Arkansas 72205.

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**The term "Anesthesiologist" did not come into use until the 1930's. It refers to a physician fully trained in anesthesia, who devotes all his professional time to the conduct of anesthesia and related items. An anesthetist could be a physician (now rare) who spends part of his professional life administering anesthesia, or a nurse who administers anesthesia. In 1945, the American Society of Anesthesiologists, founded in 1936, changed its name from the American Society of Anesthetists.[3] "Anesthesiologist" in the USA is equivalent to "Anaesthetist" in Great Britain.

Arkansas was held at Ft. Logan Roots, 1917), and "Contributions of the Anesthesiologist to the Medical Profession" (1957).[20]

THE FIRST ANESTHESIOLOGISTS IN ARKANSAS

Cadmus Marvin Brooks, M.D., was the first anesthesiologist in Arkansas. (Fig. 1) A native of



Figure 1.

CADMUS M. BROOKS, M.D. 1891-1953. First Anesthesiologist in Arkansas. Courtesy of Mrs. Eloise Brooks.

Roland, Arkansas, he graduated in 1910 from the College of Physicians and Surgeons in Little Rock, which later merged with the University of Arkansas School of Medicine.[21] Dr. Brooks served in World War I, and he maintained a general practice in Roland and in Little Rock where he was also affiliated with the County Hospital. Along with his general practice, he also administered anesthesia part-time as did many general practitioners of the time.[22] Other physician anesthetists of that era were Bryce Cummins, M.D., M. G. Daly, M.D., Dr. Estes, and pediatricians such as Sam Phillips, M.D., who gave anesthesia to their small patients when surgery was required. In 1929 Dr. Brooks, probably at the urging of Dr. Joe Shuffield, trained for a period of time at Tulane University in order to become sufficiently proficient in anesthesia to practice it full-time.[22] As Dr. Shuffield was an orthopedic surgeon, no doubt Dr. Brooks concentrated on anesthesia for that specialty. Dr. Brooks worked primarily at Baptist Hospital in Little Rock, and also had a teaching appointment at the University of Arkansas School of Medicine. Dr. Brooks continued to work at Baptist Hospital during the 1930's and 1940's, where Dr. Cummins also practiced. In 1942 a young physician, Dr. Agnes Kolb, joined Dr. Brooks and received instruction in anesthesia. She continued to administer anesthesia full-time at Baptist Hospital until her retirement in 1982.[22] Dr. Brooks was the first president of the Arkansas Society of Anesthesiologists, (Table 1) and the first true anesthesiologist in Arkansas. He died September 1, 1953,[23] several weeks after surgery for carcinoma of the colon.

The second anesthesiologist and first to be certified by the American Board of Anesthesiology in Arkansas was Mahlon Dibrell Prickett, M.D., who was born June 3, 1908, in Traskwood, Arkansas. (Fig. 2) Dr. Prickett graduated from the Uni-



Figure 2.

MAHLON D. PRICKETT, M.D. 1908-1977. The second Anesthesiologist in Arkansas. Taken when he was a resident at the University of Iowa, circa 1946. Courtesy of Dr. John Tinker of the University of Iowa.

versity of Arkansas College of Medicine in 1935, interned in Shreveport, Louisiana, and was in general practice in Malvern, Arkansas, from 1936

TABLE 1

PRESIDENTS OF THE ARKANSAS SOCIETY OF ANESTHESIOLOGISTS

1948	Dr. C. M. Brooks	1967	Dr. Robert Chester
1949	Dr. C. M. Brooks	1968	Dr. Robert Chester
1950	Dr. James Newbill	1969	Dr. Roger Vaughter
1951	Dr. James Newbill	1970	Dr. Roger Vaughter
1952	Dr. James Newbill	1971	Dr. Richard Clark
1953	Dr. W. A. Lamb	1972	Dr. Carol Eason
1954	Dr. W. A. Lamb	1973	Dr. Walter Guinee
1955	Dr. Cecil Shafer	1974	Dr. R. C. Goodman
1956	Dr. Agnes Kolb	1975	Dr. Paul Means
1957	Dr. Dola Thompson	1976	Dr. Edwin Coffman
1958	Dr. R. C. Goodman	1977	Dr. Nolan Beverly
1959	Dr. R. C. Goodman	1978	Dr. Agnes Kolb
1960	Dr. R. C. Goodman	1979	Dr. Fay Sloan
1961	Dr. Joe Ward	1980	Dr. Fay Sloan
1962	Dr. Walter Klugh	1981	Dr. James Porter
1963	Dr. Walter Klugh	1982	Dr. James Porter
1964	Dr. Frank Dulaney	1983	Dr. Arlee Pollard
1965	Dr. Frank Dulaney	1984	Dr. Arlee Pollard
1966	Dr. William Sessoms	1985	Dr. Howell Hill

until 1944.[24] In that year he joined the residency program of Stuart Cullen, M.D., at the University of Iowa, completing his training in 1946. While a resident, he authored a paper with Dr. Cullen on the subject of spinal anesthesia.[25] Most of his professional career in Little Rock was at St. Vincent Infirmary, where Drs. Daly and Estes had worked.

Dr. Prickett joined the staff at St. Vincent Infirmary in 1946 where he supervised nurse anesthetists. He remained there until 1951 when he departed for Phoenix, Arizona, for health reasons. He continued to work part-time in Phoenix until his death on February 14, 1977.[24] While at St. Vincent, Dr. Prickett established a school for nurse anesthetists which trained many of the nurse anesthetists in the state. This school existed from 1949 until 1979. Paul Hickey, M.D., followed Dr. Prickett at St. Vincent Infirmary.

A prominent anesthesiologist in Little Rock in the 1940's and 1950's was James Newbill, M.D. He returned to Little Rock in 1948 after serving with the Armed Forces. Dr. Newbill practiced primarily at Baptist Hospital and was the son-in-law of Dr. Cadmus Brooks. Dr. Newbill taught Dr. Agnes Kolb endotracheal intubation and was also on the faculty of the University of Arkansas School of Medicine. He died in 1954 of hypertension and a myocardial infarction.

During these decades, open drop ether fell into disuse, and anesthesia machines became a part of the administration of every anesthetic. Endotracheal anesthesia became commonplace. In the 1970's and 1980's, electronic monitoring, blood gas and electrolyte monitoring, and special techniques have permitted new and advanced surgical procedures to be performed.

By the 1950's anesthesiologists began to practice in other cities in Arkansas. R. C. Goodman, M.D., was the first in Ft. Smith. James Rice, M.D., was the first anesthesiologist in Pine Bluff; Walter Klugh, M.D., in Hot Springs; John Laws, M.D., in Texarkana; and Dwight Dodson, M.D., in Fayetteville.

ANESTHESIA AT THE UNIVERSITY HOSPITAL

The predecessor of University Hospital was constructed at 12th and McAlmont, Little Rock, in 1924, and was called "City Hospital".[26] In 1935, with construction of the medical school on the old Edwin Bentley estate just south of the hospital, it became "University Hospital". (Fig. 3) Anesthesia at City Hospital, probably was administered by general practitioners, surgeons, and nurse anesthetists. No records could be found relating to this. But since this method of administering anesthesia was followed at the private hospitals in Little Rock, this probably also

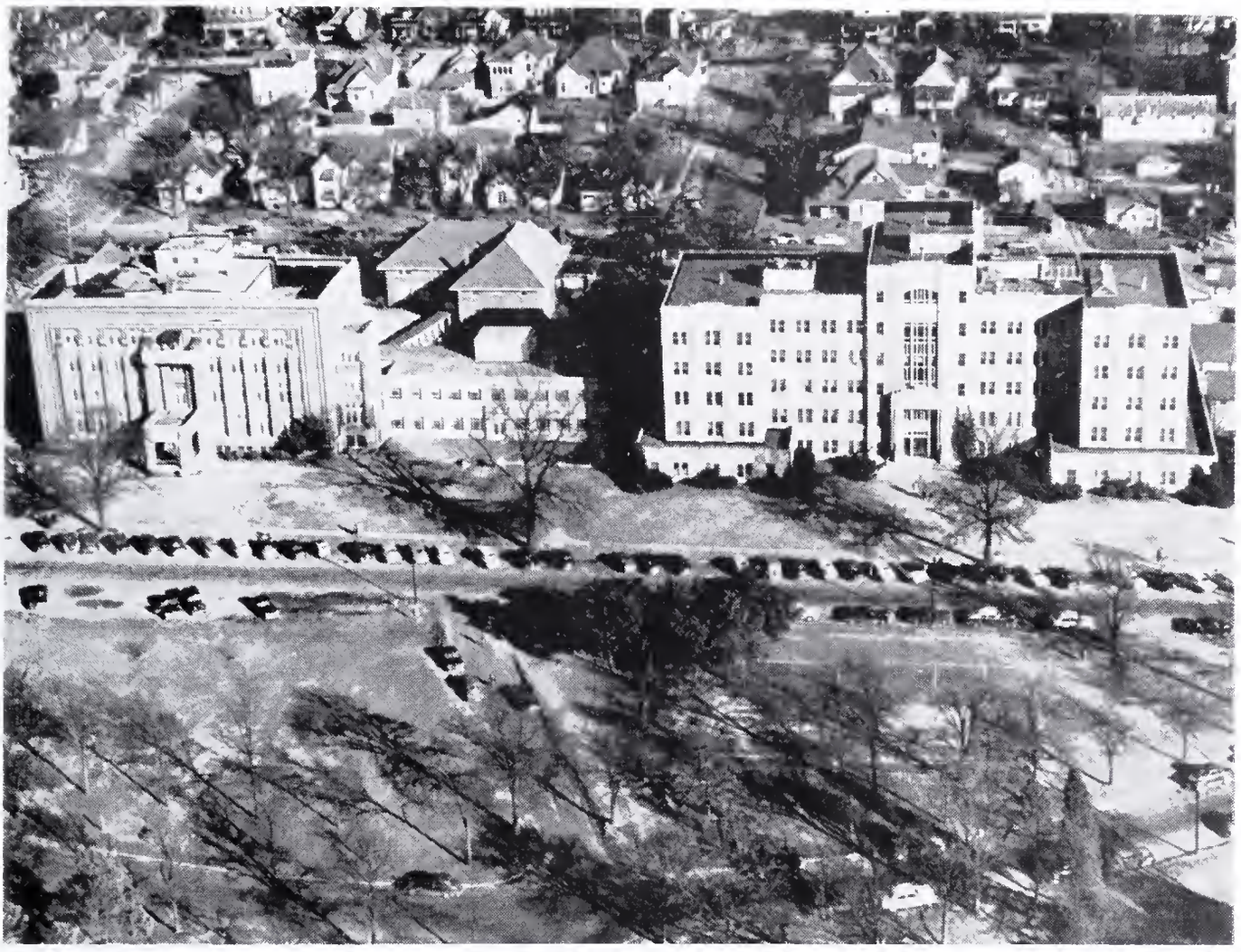


Figure 3.

University Hospital (left) and the University of Arkansas School of Medicine (right), Circa 1950. MacArthur Park is in the foreground. Note the houses to the east of the hospital and school, which were demolished for Interstate Hwy. 30. The medical school is now occupied by the Graduate Institute of Technology and the University Hospital, by Baldwin Electronics. Courtesy of Dr. Edwin Rushia.

occurred at City Hospital. When it became University Hospital, presumably this arrangement continued. It is known that in the late 1940's there were only nurse anesthetists at University Hospital, and Dr. Prickett consulted with them.[27]

DEPARTMENT OF ANESTHESIOLOGY, UNIVERSITY OF ARKANSAS COLLEGE OF MEDICINE

Even though this paper attempts to cover all of anesthesiology in Arkansas, the Department of Anesthesiology of the University of Arkansas College of Medicine and University Hospital has touched almost every anesthesiologist in the state, and therefore will be discussed in detail.

The Department of Anesthesiology was founded in 1931 with Cadmus M. Brooks, M.D., as the first chairman.[28] Dr. Brooks was very likely a member of the voluntary faculty, as were many of the practitioners in all areas of medicine in Little Rock, and probably did not receive compensation for his time spent at the medical school. Presumably this involved visits one or two days a week, and may have included Saturday mornings. Dr. Brooks is listed in the School of Medicine Bulletins as Professor of Anesthesiology, from 1931/1932 to 1952/1953 (the School of Medicine became the College of Medicine in 1974). In 1948/1949, he is listed as head of the Department; Drs. M. D. Prickett, W. A. Lamb and J. Newbill are also listed as members of the Department. No doubt they also were on the voluntary faculty. R. M. Lord, D.D.S. was also active during this period and he recalled:

> I left Little Rock for three years, returning in October, 1936, when I again gave part of my time to the dental charity clinic at the University, where oral surgery was performed for the patients. I returned to the staff as an Assistant Professor of Oral Surgery in 1936. Dr. Brooks again renewed this request to teach anesthesiology for dental patients. We made

arrangements to meet in the clinic every Thursday at 1:00 p.m. to take care of the dental extractions under general anesthesia. . . .[29]

In 1949, the first full time anesthesiologist was engaged by the School of Medicine. This was Edwin L. Rushia, M.D., who had trained at New York University and the University of Iowa. (Fig. 4) He was listed as Head of Anesthesia and Associate Professor. Also listed were Drs. C. M. Brooks, Professor, M. D. Prickett, Associate Professor, W. A. Lamb, Instructor, and James Newbill, Instructor. It should be noted that the present Chairman, Dola S. Thompson, M.D., began her training as the first resident in anesthesiology in Arkansas under Rushia in 1950. Despite the fact that he was virtually a one-man department, much prograss was made under Rushia. Affiliation with the Department of Pharmacology allowed for increased student teaching. (Fig. 5) New equipment was brought into the operating room (Fig. 6) and more residents were trained. Rushia departed in 1952 for the University of Virginia, and was replaced by Cecil W. Shafer, M.D., who trained at the University Hospital in Baltimore, Maryland. (Fig. 7) The Department of Anesthesiology by then had reverted into a Division of the Department of Surgery, Dr. James Growden, Chairman.

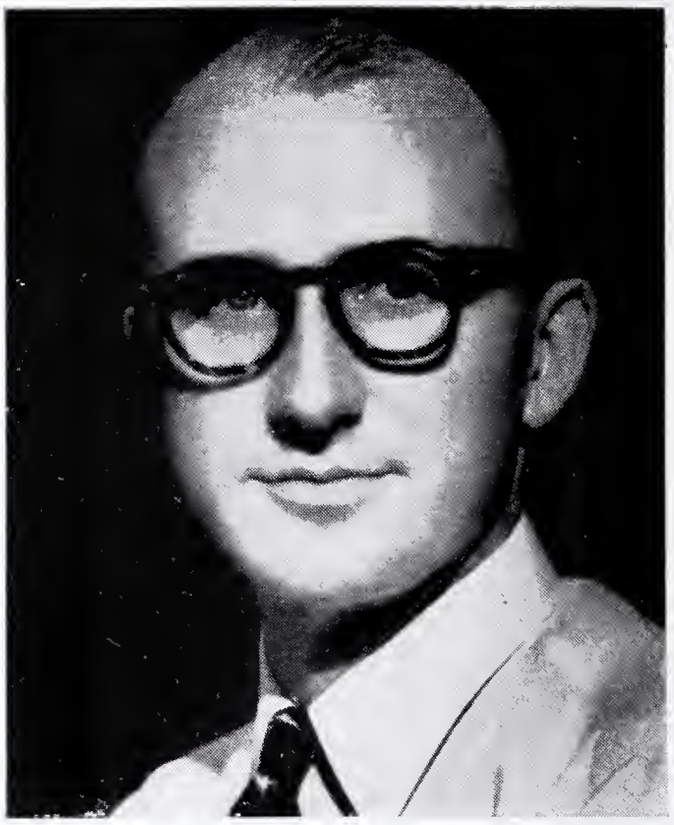


Figure 4.

EDWIN L. RUSHIA, M.D. Chairman, Department of Anesthesiology, 1949-1952.



Figure 5.

Experiment in the Department of Pharmacology, University of Arkansas School of Medicine. Dr. Edwin Rushia is ventilating the volunteer, Dr. Lloyd Seager is adjusting the ECG, and Dr. John Whitney is injecting the curare. Mary Ann Rushia is the lady pictured. The name of the volunteer is unknown. Courtesy of Dr. Edwin Rushia.

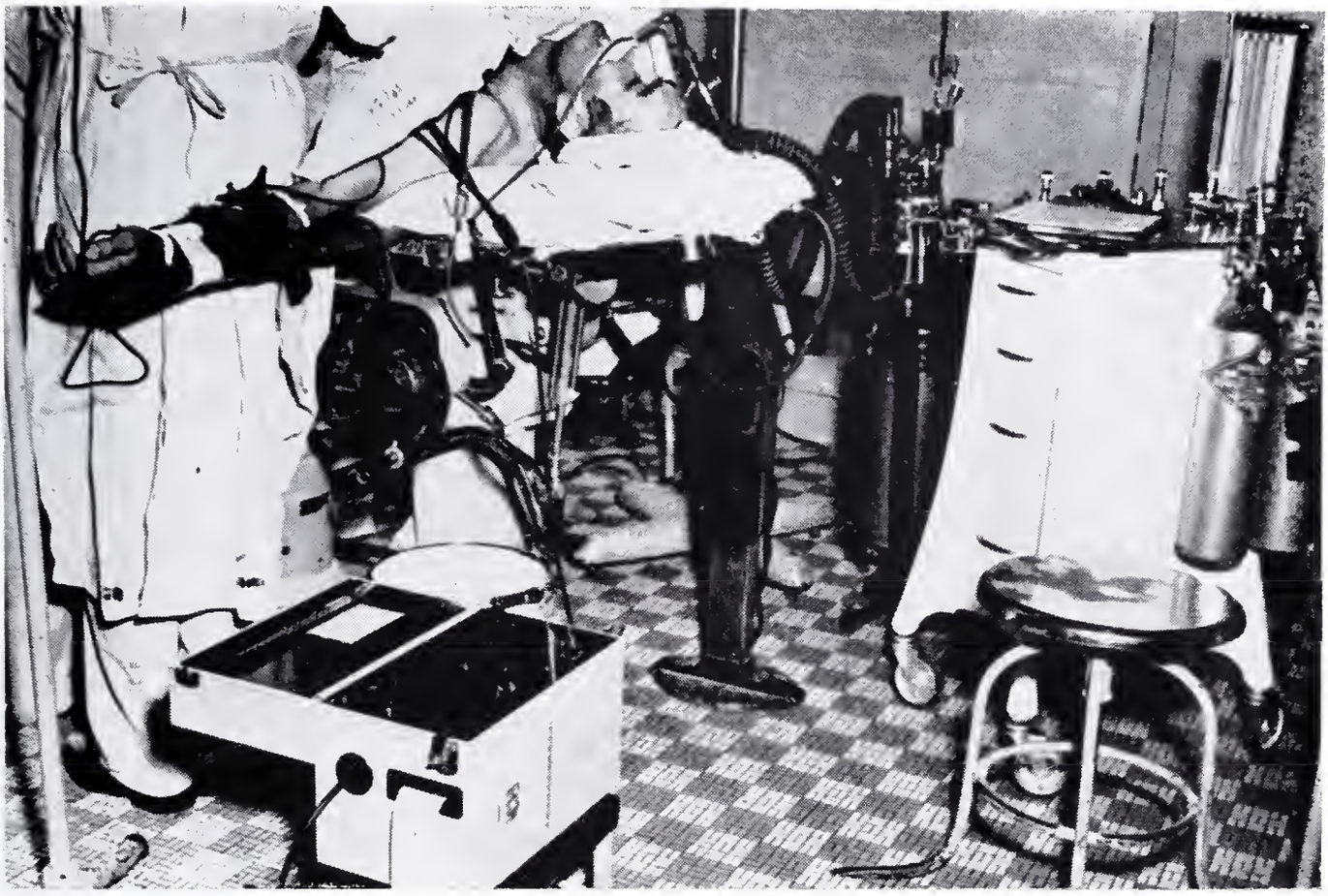


Figure 6.
Operating Room, University Hospital, Circa 1950. Courtesy of Dr. Edwin Rushia.



Figure 7.
CECIL W. SHAFER, M.D. Chairman, Division of Anesthesiology, 1953-1964.

The 1952/1953 bulletin listed Drs. Cecil W. Shafer, Associate Professor, C. M. Brooks, Clinical Professor, James Newbill, Clinical Instructor, and W. A. Lamb, Clinical Instructor. The 1953/1954 bulletin listed Drs. C. W. Shafer, Associate Professor, P. C. Ling, Instructor, and P. Hickey, Assistant Clinical Professor. Dr. Fay M. Barnhard (later Sloan) was a prominent member of the faculty from 1954 to 1971. Approximately eighteen residents trained under Dr. Shafer. In 1956, the University Hospital moved from McAlmont Street to its present location, 4301 West Markham. (A residency training program in anesthesiology existed at St. Vincent Infirmary under Dr. Hickey in the 1950's and 1960's producing several anesthesiologists). After Dr. Shafer's departure for the University of Louisville in 1964, Ferdinand E. Greifenstein, M.D., (Fig. 8) was appointed chairman. Dr. Greifenstein trained at the University of Pennsylvania and had been chairman at the Wayne State University School of Medicine. During this time the organization retained its Divisional status. An obstetrical anesthesiologist was recruited, this writer, the faculty enlarged slightly, and approximately ten residents were trained from 1965 to 1973, the date of Greifenstein's departure. Departmental status was obtained in 1974 with the appointment of the current Chairman, Dola S. Thompson, M.D. (Fig. 9) She was the first chair-



Figure 8.
FERDINAND E. GREIFENSTEIN, M.D., Chairman, Division of Anesthesiology, 1965-1973.



Figure 9.
DOLA S. THOMPSON, M.D., Chairman, Department of Anesthesiology, 1974-Present.

man to have trained at University Hospital. The faculty has increased significantly during her chairmanship: nine at the University Hospital, three at Little Rock Veterans Administration Hospital, and three at Arkansas Children's Hospital. The number of residents currently stands at about twenty-seven (including six interns) and approximately forty-two residents completed the program from 1974 to 1985. Most of the anesthesiologists in the state had contact with the department as medical students, trained in anesthesiology in the department, or did both. Those who trained outside the state are influenced, to a greater or lesser extent, by the department.

ARKANSAS SOCIETY OF ANESTHESIOLOGISTS

The majority of the anesthesiologists in the state are members of the Arkansas Society of Anesthesiologists, a component society of the American Society of Anesthesiologists. The Arkansas Society was founded in 1948, and the first president was C. M. Brooks, M.D. A list of all the presidents of this society is noted in Table I. Membership originally numbered about six and had increased to ten by 1949. Currently there are approximately 104 members of the Arkansas Society including resident members. These anesthesiologists are found all over the state although the majority are established in the greater Little Rock area.

NURSE ANESTHETISTS IN ARKANSAS

Nurse anesthetists have worked in Arkansas for decades; even longer than anesthesiologists. The first nurse anesthetists were trained in the 19th century at the Mayo Clinic in Rochester, Minnesota. When the first nurse anesthetist came to Arkansas is not known. Undoubtedly, many nurse anesthetists evolved because they were asked to give anesthesia, and were pressed into service, learning by doing. There are approximately 200 nurse anesthetists (CRNA's) in Arkansas. Many work under the direction of an anesthesiologist, or in the absence of anesthesiologists, especially in small towns, under the direction of a surgeon. Many nurse anesthetists have worked in the Department of Anesthesiology at University Hospital.

ANESTHESIOLOGISTS AROUND THE STATE

Although the first anesthesiologists were in Little Rock, there are now anesthesiologists spread throughout the state. The greatest concentration

outside the greater Little Rock area is in Ft. Smith, where there are twelve. There are seven in Fayetteville, five in Hot Springs, five in Pine Bluff, three in North Little Rock, three in Jonesboro, three in Rogers, two in El Dorado, and one each in Batesville, Benton, Blytheville, Conway, Helena, Mountain Home, Ozark, Paragould, Russellville, Texarkana and Van Buren.

SUMMARY AND CONCLUSION

The practice of anesthesiology in Arkansas has changed enormously in the last fifty years. Its development has paralleled the progress of this specialty in many parts of the country. It is likely anesthesia was first administered in Arkansas in the 1850's. However, the first physician trained in anesthesia and devoting full time to it did not appear until 1930. After that, growth was slow. Not until a residency training program was established at University Hospital did a significant number of anesthesiologists appear. Today anesthesiology is a large and vigorous specialty with over 100 physicians engaged in its practice. No doubt the next fifty years will see more progress than in the last fifty. Numbers entering the specialty will increase, and training will become more intense, as progress continues in medicine in general and anesthesiology in particular. Finally, the author solicits information, opinions and comments on the history of anesthesiology in Arkansas so that this account may be updated at some future date.

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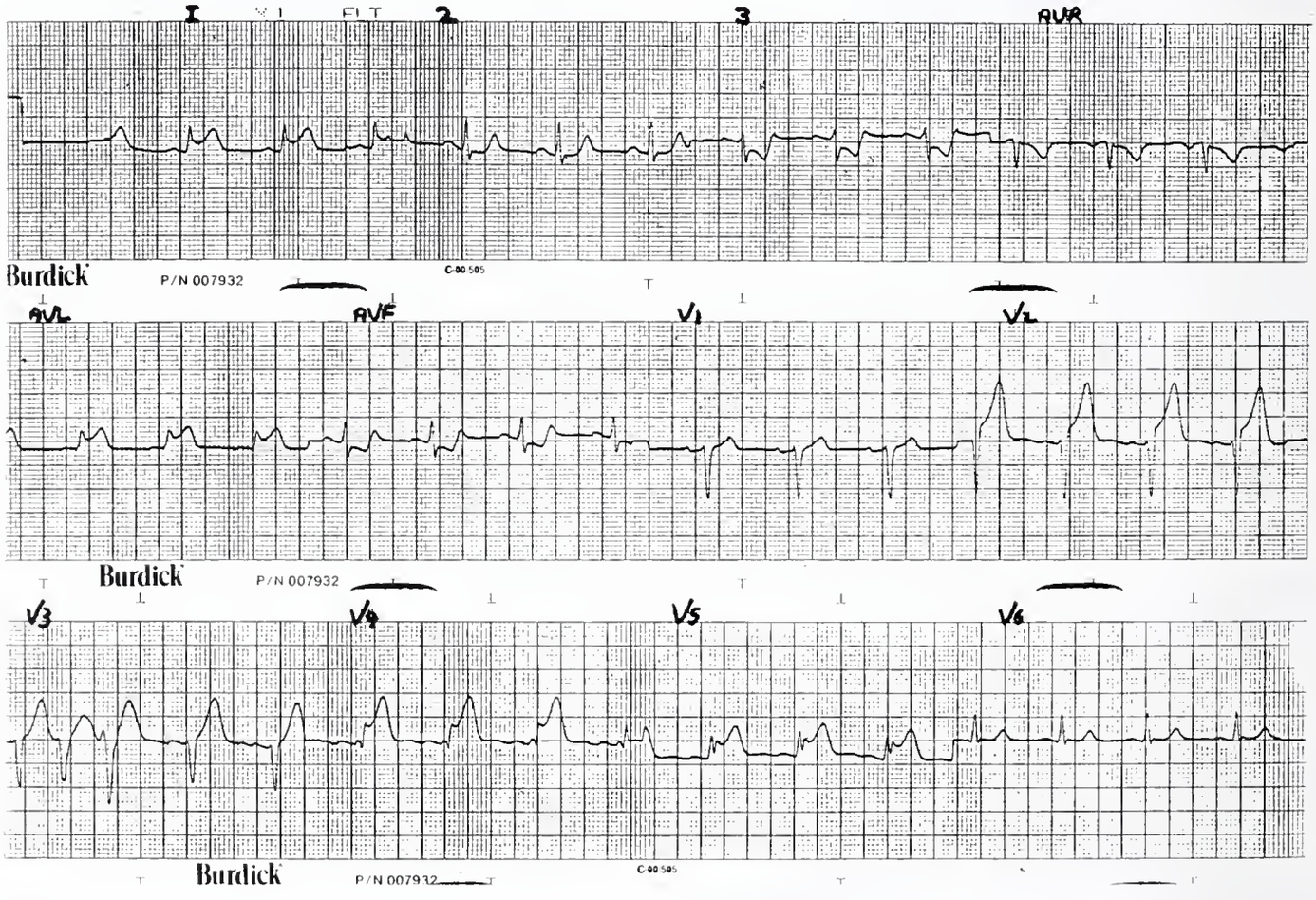
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ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 559)

HISTORY: C. H. is a 35-year-old man who presented to the hospital because of crushing substernal chest pain of twenty minutes duration. It came on while he was at rest. He smokes cigarettes, as his only coronary risk factor. On presentation, he had an S_3 gallop. TNG yielded rapid relief of his pain. What do you think of his initial ECG, which is shown here?



Randy Jordan, M.D., and John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

Closed Intramedullary Nailing of Femoral Shaft Fractures

Richard A. Nix, M.D.*

Treatment of fractures of the femoral shaft is always a challenge. The seemingly endless variety of fracture patterns must be matched with an appropriate technique of closed or open stabilization. Because of the massive trauma, femoral fractures are often associated with other head, chest, abdominal or orthopedic injuries. This very frequently affects the management of these patients. The most important factors in determining the method of treatment include: age of patient, open versus closed fracture, fracture pattern and presence of associated injuries. Noninvasive treatment is the first consideration by orthopedic surgeons in fracture management. This, of course, obviates worry of operative complications. There are, however, distinct points of morbidity associated with prolonged traction and/or casting. Because of its very large size and composition of dense cortical bone, fractures of the femoral shaft can frequently require five to six months of healing to obtain clinical and radiographic stability without internal stabilization. In children, however, fracture union is much quicker and complications of joint stiffness are rare. Closed reduction and spica (body) cast application remain the mainstay of treatment in femoral fractures in this age group. By mid-adolescence these patients relatively become better candidates for surgical stabilization.

In adults there is distinct morbidity associated with prolonged traction and spica cast application. This is tolerated much more poorly by adults, and associated skin and pulmonary problems are significant. Joint stiffness is a very common complication. This does, however, remain an excellent mode of treatment in cases complicated by associated injuries or other factors.

Surgical treatment of femoral shaft fractures includes several options. Open reduction and internal fixation with compression plates and screws offers the advantage of excellent reduction, but, stability will not allow weight bearing. Often supplemental casting is necessary. This technique is rarely used. Cerclage (circumferential) wiring for long oblique or spiral fractures can be used. Again, this rarely offers sufficient stability for immediate weight bearing. Often, this is supplemented with intramedullary nailing.

Intramedullary nail stabilization of femoral shaft fractures can be done by one of two techniques. Open nailing refers to direct exposure of the fracture site usually with retrograde passage of the intramedullary (IM) nail proximally out the greater trochanter. This is followed by a distal passage of the nail into the distal fragment. Closed intramedullary nailing actually refers to *closed reduction* followed by IM nailing of the fracture through a distant site—through the buttock entering the superior femoral neck with the IM rod. The fracture site itself is never actually exposed other than through a great distance along the intramedullary canal (see Figures 1 and 2). Advantages of IM nail stabilization of femoral shaft fractures far outweigh advantages of other

*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.

forms of treatment in most cases.[6] Further, there are distinct advantages of closed IM nailing techniques over open nailing. Infection rates have been reduced by avoidance of massive open incisions into the fracture site.[1,4] Often, a very small incision at a distant site can be employed (see Figure 3). Additionally, closed reduction and IM stabilization avoids further devascularization of the femur's periosteal blood supply. This is felt to expedite fracture union.[5]



Figure 1.

A midshaft femoral fracture with limited comminution in this adult is a good candidate for closed intramedullary nail stabilization.



Figure 2.

Excellent stability against bending and rotation is imparted by this reamed IM rod. Undisturbed periosteal tissues form exuberant callus.

HISTORY

Stabilization of shaft fracture of long bones has been done for decades prior to the popularization of intra-operative x-ray control, this necessarily was done through an open direct approach to the fracture site. Even today this open technique is commonly used in a number of long bone fractures. In Germany, in 1940, Küntscher first reported his series of closed intramedullary nailing of femoral fractures. His use of x-ray control and intra-operative traction obviated in most cases the need for open reduction and allowed closed manipulation of the fracture fragments for passage of the intramedullary nail. This was introduced from a distant site, that is, above the greater trochanter. Even so, this remained a difficult technique because standard x-ray techniques in the operating room were very time consuming and offered only intermittent views of the fracture site. The potential for further comminution of the fracture while reaming or driving the nail was ever present.

The development of a safe and mobile fluoroscope (image-intensifier) in the next decade was a major advance in the techniques of closed IM nailing.[7] At last the surgeon could almost continually visualize the fracture site while reaming and driving the IM nail without the necessity of opening the fracture site for direct visualization. Additionally, Küntscher developed a system of flexible reamers to allow enlargement of the medullary canal such that a very large IM nail with adequate bending strength could be inserted. The use of an image-intensifier and fracture table for intra-operative traction and positioning remain an indispensable part of the armamentarium (see Figure 3).

BIOMECHANICS

The most common type of intramedullary femoral nail used today was popularized by Küntscher.[3] There are many advantages to its cloverleaf design as seen on cross section (see Figure 4). Firm fixation of the shaft fracture is contingent on reaming of the IM canal to obtain

a tight fit. Of additional benefit, is the use of closed reduction to avoid further disruption of periosteal blood supply at the fracture site.

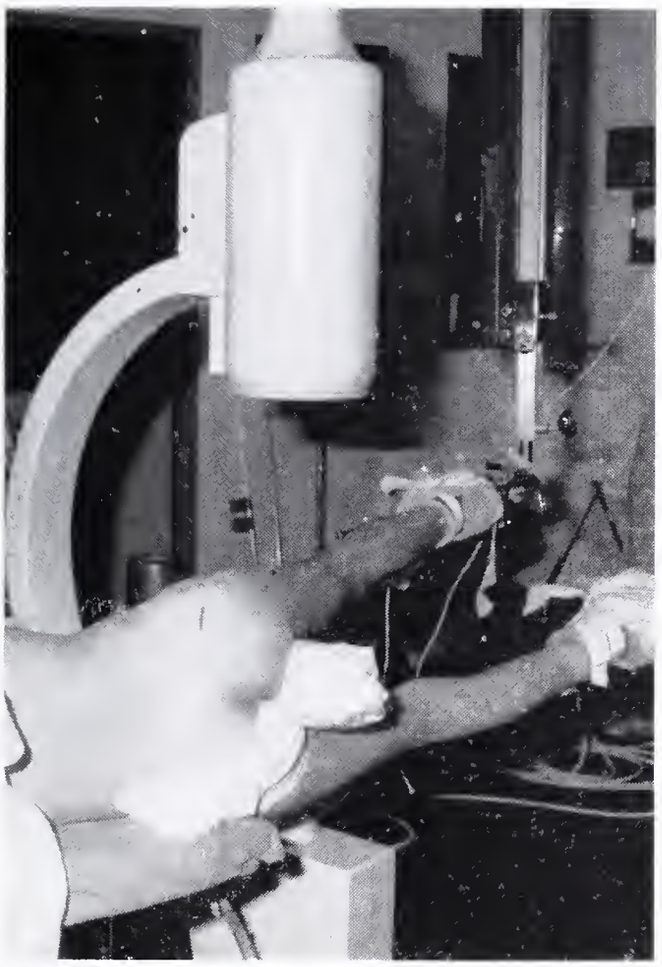


Figure 3.

Here is shown the positioning of the patient, fracture table and image intensifier x-ray. The incision for closed IM nailing is marked on the buttock.

The cloverleaf configuration of the stainless steel nail in cross section (see Figure 4) allows it to be impacted firmly in the reamed medullary canal. This, in addition, adds somewhat to the rotational stability of the fracture fixation. The bending strength of most average sized Küntscher nails is sufficiently strong for immediate weight bearing by the patient.

INDICATIONS

Intramedullary stabilization of fractures in the femur is generally limited to an area extending from about two centimeters below the lesser trochanter to ten centimeters above the femoral epicondyles. This area can be extended slightly with auxiliary fixation (open cerclage wires, open lag screws or closed interlocking nail techniques). In the stable adult trauma victim, there are countless advantages to internal stabilization of these fractures. In addition to more rapid orthopedic rehabilitation, early mobilization of the patient minimizes pulmonary, GI and GU complications. Often, patients with closed head trauma are unruly and impossible to manage in traction. This also, is a relative indication for stabilization of long bone fractures such as those in the femoral shaft.

Open fractures of the femur can also be managed by closed IM nail stabilization. Usually this requires initial surgical debridement of the wound followed by skeletal traction for one to two weeks or until wound control is adequate. After success-

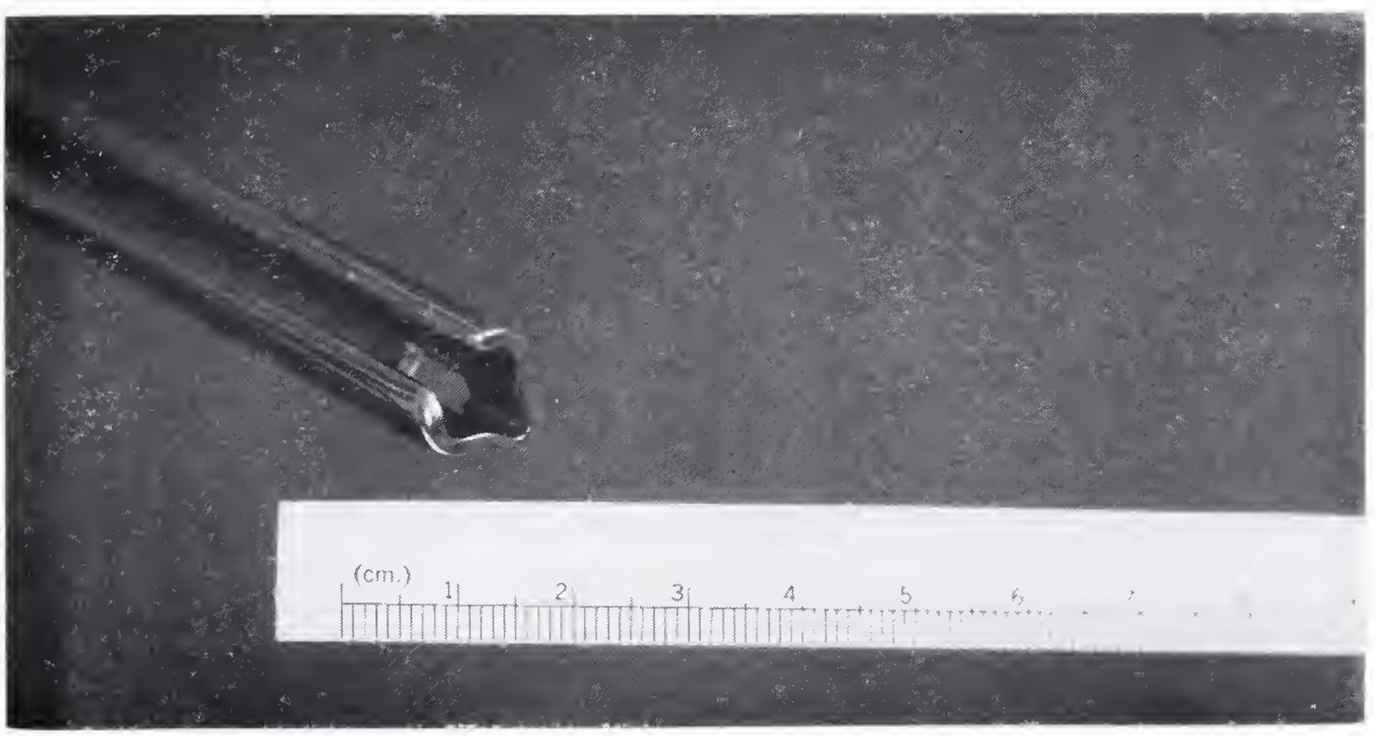


Figure 4.

This closeup shows the cloverleaf configuration of a Küntscher nail.

ful primary closure, delayed primary closure or skin grafting, the fracture may then be treated as a closed fracture. In considering IM nail stabilization in this situation, it is imperative to be comfortable that no active infection persists after open fracture. A more manageable localized bone infection from open fracture can be spread throughout the length of a bone during reaming and IM nail placement. There remains no substitute for early meticulous wound irrigation and debridement along with appropriate antibiotic therapy.

THE INTERLOCKING NAIL

The recent development of an interlocking nail (see Figure 5) has greatly expanded the indications for closed intramedullary nailing. Gross comminution, cortical bone loss or segmental fractures, require stabilization in addition to the simple longitudinal alignment afforded by an IM rod. Axial shortening and rotational change are problems to be prevented in these complicated fractures (see Figures 6 and 7). Proximal and distal screws through the IM rod stabilize these fractures against shortening or rotation.

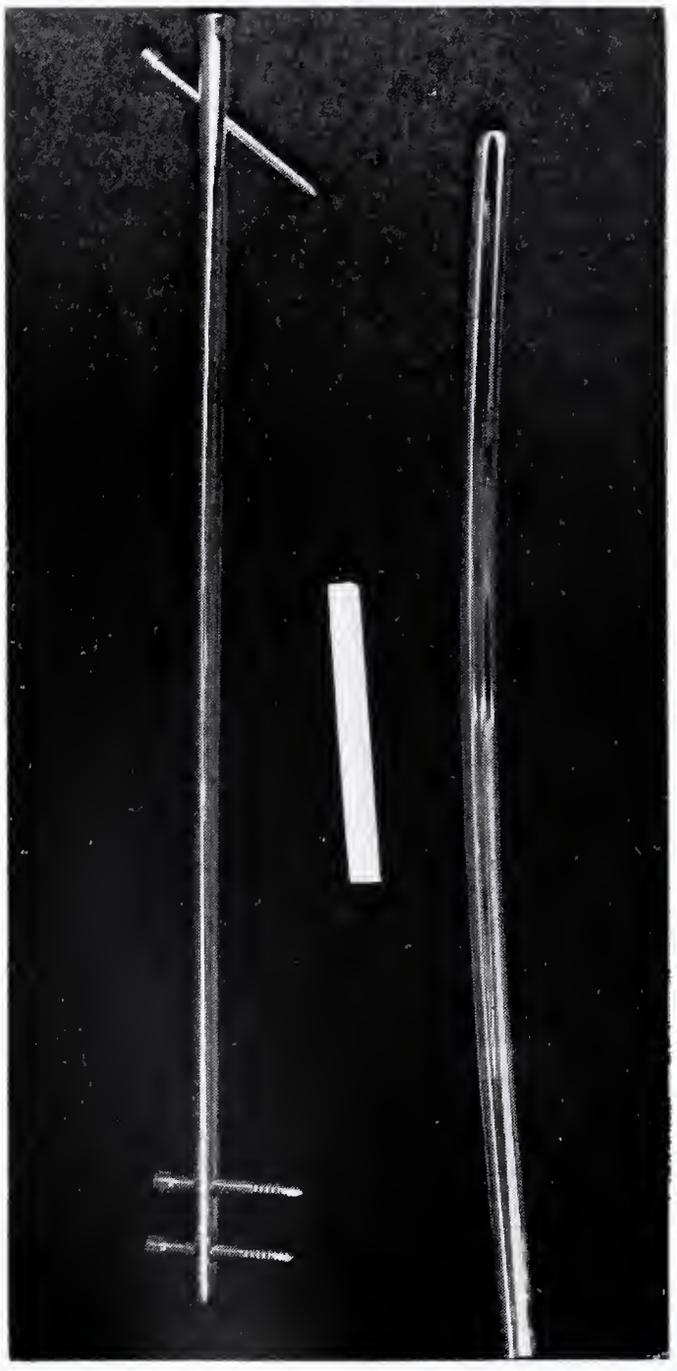


Figure 5.

Noncomminuted shaft fractures require only IM nail stabilization (right). Further comminution may demand an interlocking nail to prevent bone shortening (left—see text).

Perhaps the most popular form of interlocking nail was developed by Grosse-Kempf in France (see Figure 5). Their initial data was published in 1978 in the French orthopedic literature. The primary advantages of the interlocking nail include improvement in rotational and longitudinal stability. Disadvantages include the possibility of distraction maintained at the fracture site by interlocking screws resulting in a delayed union. Simple IM nails allow axial compression and impaction of fracture fragments. Significant comminution however, allows excessive axial shortening of the bone and must be prevented by the interlocking screws. Grosse originally recommended that, after three to five months of fracture healing, the static or rigid fixation of the fracture, be converted to a sliding dynamic fixation (dynamization) by removal of either the proximal or distal screws. Thoresen, *et al.* noted significant complications with rotation and shortening following dynamization.[8] Their recommendations are for maintenance of static nailing throughout the healing period.

TECHNIQUE

Initially, the patient is placed in skeletal traction using a proximal tibial traction pin. In distal femoral shaft fractures it is advisable to use a distal femoral traction pin to facilitate reduction at surgery. Associated head, chest and abdominal injuries are frequent and must be attended. Orthopedic treatment of femoral fractures is usually delayed a few days to allow stabilization of the patient. Adequate distraction of the fracture fragments while in traction is mandatory. Bone overriding and soft tissue contracture preclude closed reduction in the operating room.

Measurement of the appropriate nail length and width to be used is usually done during the surgical procedure. Extremely short or tall patients should be measured pre-operatively with a special x-ray of the contralateral intact femur. This should be taken at a one meter tube-to-plate



Figure 6.

Gross comminution demands interlocking stabilization to prevent shortening or rotation.

distance.[2] This allows approximately ten percent magnification on the film. A Küntscher ossimeter (calibrated ruler) is then used to measure the appropriate length of nail.

The patient is taken to the operating room and after administration of general anesthesia, is transferred to the fracture table. They are then placed in the lateral decubitus position as demonstrated in Figure 3. Bony prominences are appropriately padded. The feet are secured to the fracture table to allow adequate distraction traction for closed reduction. The C-arm image intensifier is positioned to afford satisfactory AP and lateral views of the entire femur. Traction, manipulation and x-ray evaluation are then used to ascertain satisfactory alignment of the fracture fragments for passage of the guide rod. In IM nail stabilization of fractures, rotational alignment is often difficult to determine. In this position, internal rotation of the patella twenty to thirty degrees affords excellent rotational alignment. Prep and drape of the patient is then carried out. Simple closed IM nail procedures without comminution require only entry through a small four



Figure 7.

A Grosse-Kempf interlocking IM nail was used to stabilize this fracture against shortening or rotational deformity.

centimeter incision in the buttock (see Figure 3). Comminuted fractures demanding interlocking nail technique obviously require sterile preparation of the entire buttock and thigh to the knee. A small incision in the buttock divides the abductor fibers and allows placement of a sharp awl in the lateral aspect of the superior femoral neck just medial to the greater trochanter. Under C-arm control this is positioned in line with the femoral shaft in both AP and lateral views. The cortex is then penetrated with the awl. This is followed by introduction of a bulb tipped guide rod that is slightly bent in the distal two centimeters to facilitate reduction. This is passed down the IM canal and manipulated across the fracture site. On occasion this step is quite difficult and requires the assistance of an unscrubbed surgeon to facilitate reduction and passage of the rod. It is then passed further to the distal femoral epiphyseal scar. The traction should be released sufficiently to avoid distraction of the fracture at this time. Nail length can then be accurately deduced by comparing a guide rod of identical length to the exposed guide rod exiting the superior femoral neck. This technique in average sized patients minimizes introduction of measurement errors. Serial reaming is then carried out using Küntscher's flexible cannulated reamers. Beginning at eight millimeters, serial reaming is

performed in one millimeter increments until cortical bone is felt in the femoral isthmus. Increments of 0.5 millimeters are then used until secure cortical reaming is felt throughout the femoral isthmus. A larger smooth tipped driving rod is then passed alongside the bulb tipped rod to the distal femur. The bulb tipped rod is then removed. The appropriate length Küntscher nail is then selected in a width 0.5 millimeters smaller than the last reamed diameter. It is then introduced and impacted down the femoral canal. Simple Küntscher nails of a cloverleaf design are placed with the slot anterior. Interlocking nails of the Grosse-Kempf variety are placed with the slot posterior. With tightly fitting nails, care must be taken not to distract the fracture site during impaction of the nail distally. Upward pressure on the knee by an assistant during nail impaction can prevent this.

Final inspection of the entire length of the nail should then be carried out using the image intensifier. The driving rod is then removed and the buttock wound closed.

In fractures demanding the interlocking nail technique, the IM nail is passed in an identical fashion as described above. A jig is placed over the proximal portion of the IM nail to guide in drilling, measurement and placement of an oblique interlocking screw, through the greater and lesser trochanters. Attention is then directed to the distal interlocking holes. Most commonly, the free hand technique of distal screw placement is employed. This requires visualization of these holes by fluoroscopy followed by a small incision through the IT band to the lateral femoral cortex. The medial and lateral holes through the IM nail must be exactly superimposed on the x-ray image revealing an exactly circular figure. The awl is centered over this by x-ray control and then passed through the lateral femoral cortex and holes. The medial cortex is drilled with a 4.5 millimeter drill and measured. After screw placement the second distal hole is secured using this technique. The fracture site is again inspected and the wound is closed in the usual fashion.

In uncomplicated K-nail cases, progression to full weight bearing is allowed as soon as the patient can straight leg raise with adequate quadriceps control. Knee motion exercises are instituted as soon as pain permits. Comminuted fractures that require interlocking nail stabilization must avoid weight bearing during the healing phase. As mentioned before, dynamization of interlocking nails may introduce further complications and offers minimal benefit.

DISCUSSION

There are distinct advantages to the two techniques described here using closed reduction of femoral fractures followed by IM nailing through a distant site—avoiding direct exposure of the fracture site. Technological advancements have made this possible and includes the development of a mobile image intensifier fluoroscope and flexible intramedullary reamers. There is a plethora of data showing decreased infection rates, improved fracture reduction and better joint rehabilitation using these techniques.

The interlocking nail systems have expanded greatly the indications for closed IM nailing. Their use allows treatment of even comminuted fracture patterns by closed reduction and IM nail stabilization. It is important to recognize certain severely comminuted fractures that will not benefit by internal stabilization. Although quite rare, these fractures can be treated by techniques mentioned earlier. Fracture nonunions that require bone grafting obviously demand open exposure of the fracture site, but these can also be stabilized by introduction of an IM nail proximally as described in this article.

Technological improvements as described have allowed dramatic improvements in surgical technique. This is reflected in shorter hospitalization, decreased infection rates, better fracture reduction and shorter rehabilitation.

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ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG shows a sinus rhythm. Substantial ST elevation is noted in I, AVL, and V_2-V_5, along with ST depression in II, III, and AVF. No Q-waves of significance are present. Paired ventricular ectopic beats are noted in V_3. His pain, gallop and ST-T changes suggest acute anteroseptal infarction. The response to TNG is a bit atypical but the observed response could have represented serendipity. Quickly, the patient's ECG normalized and his enzymes proved to be negative for infarction. It was concluded that the patient had Prinzmetal's syndrome. Disease of the LAD coronary artery was found and treated with angioplasty by Dr. Jordan.

The feature editor wishes to thank Dr. Jordan for his assistance with this month's ECG.



Teenage Pregnancy in Arkansas is a Problem

Cindy Westcott*

Statistics show that teenage pregnancy is a problem in Arkansas. Numbers, however, do not reflect the hardship that teenagers must face due to the social and emotional conflicts they encounter in their lives. Cindy Westcott, a social worker with the Arkansas Department of Health, describes her relationship with a 17-year-old young woman who is pregnant for the fourth time. The article provides insight as to why the young woman continues to become pregnant and what a struggle life is for her.

Sandra was 17-years-old and pregnant with her fourth child when I saw her for the first time in the small health clinic in England, Arkansas. I had been warned by the clinic staff that Sandra was angry, hostile, and difficult to work with. They mentioned that Sandra's second child, now two, was fathered by Sandra's own father. The nurse had asked Sandra if she wanted to see the social worker and Sandra had replied "no". She was at the desk checking out now, said the nurse, if I wanted to "see what I could do with her".

Two months out of graduate school and still desperately holding on to my idealism, I remember thinking . . . "she just needs someone to listen and to care, and she'll come around." (Come around to what? And for whom?) I walked out into the reception area where Sandra was standing. I don't remember what expectations I had, but Sandra didn't fit them. She was black . . . slight—maybe 5 feet tall . . . and she balanced an infant on one hip and a toddler on the other. She was turning around to leave when I introduced myself.

"Uh . . . Sandra? I'm Cindy, the Social Worker." I smiled my best Social Worker's "I believe you are a valuable human-being" smile.

"That's nice." She stopped only briefly, long enough to spear me with a glance that said "I've seen hundreds of you before, I'm not impressed, and I'm going home now." She walked purposefully out the door, leaving me alone and dejected in the hallway.

The dejection turned quickly to anger and my impulses told me to go straight to Sandra's chart and enter "hostile and uncooperative" in the progress notes. That would show her! I looked out the window and saw Sandra sitting on the porch of the clinic. Probably waiting on a ride, I thought. The toddler stood in front of her, gazing up into his mother's eyes as she said something to him. Probably telling him that that bad lady in there would take him away from her if they weren't careful. Where was my anger coming from? I didn't know. I was probably just another face to Sandra . . . another smiling face asking her questions about her home life, her personal life . . . watching to make sure she didn't hit her kids too hard. I decided to risk humiliation and walked outside to the porch, where I sat down beside her.

"Waiting for a ride?" I asked.

"Nope, are you?" she replied, with unmistakeable sarcasm.

What was I doing wrong, I wondered. Why couldn't she be like all the other patients I'd seen so far, the ones who smiled back at me, the ones who sat in the big chair across my desk, laughed at my jokes, told me how wonderful they felt about being pregnant, and poured out their feelings for me with reckless abandon, accepting my "suggestions" wholeheartedly?

"Sandra, I'm here to help you," I attempted.

"How do you know I need help?"

"I don't . . . it's just that . . . "

"You figure there's something wrong with me because I ain't got money?"

Her honesty was deflating, to say the least, or was it her obvious intelligence that was deflating

*Social Worker, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72205-3867.

to me? She was making me look at myself, and I didn't like it.

I explained the role of a Social Worker to her as best I could, hoping to dispell any thoughts she might have about my intentions. "So you see," I finished, "I'm not watching you, or judging you on what kind of mother you might be. I talk to people about their feelings."

Her answer taught me more than four years of studying psychology and two years of graduate school combined.

"I don't have the luxury of worrying about my feelings. I'm trying to *survive*."

With that she stood up, lifting the toddler to the unoccupied hip with surprising ease. She was gone long before I regained my composure.

Sandra's words stayed with me for the next several weeks. She has caused me to examine the fact that perhaps I *did* assume that something was "wrong" with people who weren't "making it" in the world. Sure, the "Social Work Philosophy" assured the "dignity and worth of all human beings" . . . but did it also assume that human beings who didn't fit into the "rat race's" definitions somehow "needed help?" I thought about the word that those of us in Public Health had adopted to describe those who are "without" . . . indigent. I stopped assuming that the patients I saw were in some kind of need. I began to realize that they knew their needs much better than I did. And I had to accept the fact that I could help some of them and others I could not. Sandra helped me to learn that "indigents" are not a group—"they" are individuals.

I saw Sandra again several months later, when she came to the clinic for her next appointment. She was in the waiting room, and I heard her telling the toddler, Witt, to stay in his chair. Although I wasn't sure where we stood, I wanted to tell her that I liked her choice of a name for her son.

"I like that name—Witt," I said.

"I'm glad you approve," she shot back, the sarcasm still there.

"Is that after someone?" I continued, ignoring it.

"After Walt Whitman," she said, softening a little.

"The poet?"

I heard her sigh. "No, the Grand Knight of the Ku Klux Klan."

For a moment, we both held our breath. Then she looked at me in the eyes—for the first time—and we laughed. Both of us.

I have since seen Sandra several times. I learned that she lives with her mother, two brothers, four sisters, and several nieces and nephews in a three room house. I learned that her second child was fathered by her stepfather, not her real father, whom she has never met. I learned that she saw her brother get killed with an ice pick when she was seven. I learned that she is no longer in school, but that she dreams of being a published poet—and that she likes Walt Whitman. And that she writes poetry.

Sandra lost her fourth child due to a miscarriage when she was four and a half months pregnant. I was out of town at the time, but I learned of it the last time I went to the England Clinic. I wanted to call Sandra and tell her I was sorry . . . but her chart indicated that she had no phone. I was asking the receptionist if she knew where Sandra's family lived when the nurse overheard me. "By the way," she said, "Sandra left a note here for you."

I took the note into my office, somehow feeling protective of the contents of the note. I opened it slowly and read: CINDY, I'M NOT DOING SO GREAT. I WOULD LIKE TO TALK TO YOU SOMETIME. HOPE YOUR TRIP WAS FUN. SEE YOU SOON, SANDRA.

That I think, is what it means to be in Public Health Social Work.

The experience I had with Sandra, I was to learn, would not be atypical. The needs of some patients have been unfathomable . . . but I have seen courage in many of them that I admire—courage that I somehow doubt I could match under the same circumstances. Many are "without" (by my standards) but few are miserable. Like Sandra, many have been "survivors" all of their lives, and could teach me a thing or two about "coping" and indeed, they have. The rewards don't appear in the obvious . . . but in hearing words like "when such and such happened I thought about you and couldn't wait to tell you," and "Guess what, I passed my G.E.D.!," and "My husband finally agreed to go to that counselor you told us about . . . we went to our first appointment yesterday" to someone simply saying "I feel better already just having someone who cares enough to listen." I have long since given up on working miracles and "curing" so-called "indigent" people with Freudian theory and Cognitive-Behavioral

therapy. Although I have sometimes felt that I could have or "should have" done more for a patient, I realize that sharing feelings . . . and having someone ask about feelings . . . is indeed a "luxury" to many of them. But it is a "luxury" that I see many of them do more with than could be imagined. Social Work in Public Health is taking the time to acknowledge the *human*-ness of people who have been treated like numbers for most of their lives. A touch of caring—however brief and futile it may seem at the moment—means more to them than we will ever know. And of that I'm sure.

Cindy Westcott, LMSW, graduated in 1985 with a Master's Degree in Social Work from UALR. She currently works for the Arkansas Department of Health providing social work counseling to obstetrics patients in Health Department clinics and at the University of Arkansas Medical Center.



Pediatric Update:

Systemic Lupus Erythematosus Preceding Acute Lymphoblastic Leukemia

Morris Kletzel, M.D.,* Laura Melloni, M.D.,** Arturo Terrez, M.D.,*** and Jaime Rosenthal, M.D.****

ABSTRACT

Sequential presentation of systemic lupus erythematosus and acute lymphoblastic leukemia in the same patient is unusual. The two entities could be different expressions of one immunologic abnormality. Possible pathophysiologic mechanisms are discussed.

INTRODUCTION

Acute lymphoblastic leukemia (ALL) and systemic lupus erythematosus (SLE), have a great variety of clinical presentations some of which are shared by both disease processes and others of which are unique to each one of them. The coexistence of these two rare disorders in a sequential presentation in the same patient could be purely coincidental, or may indicate a immunologic relationship.[1]

This paper presents a child who expressed both of these entities sequentially and discusses the possible pathophysiologic mechanisms.

CASE REPORT

A four-year-old Latin American female presented with myalgia, arthritis, and fever of seven days duration. She had been treated with penicillin for seven days. Four hours prior to admission, she developed a right hemiplegia with aphasia and coma. Initial neurologic examination showed a semi-comatose child with flaccid paresis in the right extremities, right Babinski and conjugated gaze to the left with bilateral papilledema. Deep tendon reflexes were decreased bilaterally, but the rest of the examination was essentially normal. Initial laboratory studies included: Hb 6.1 gm/dl, Hct 17.2%, 4,600 leukocytes with 10% neutrophils, 2% bands, 83% lymphocytes, 2% monocytes and a platelet count of 145,000. The peripheral smear failed to show abnormal cells. The serum glucose was 91.0 mg/dl, BUN 13.2 mg/dl, creatinine 0.4 mg/dl. Cerebrospinal fluid (CSF) had three leukocytes, 100% monocytes, protein 20mg/dl, and normal pressure, skull x-rays were normal. C-reactive protein was negative. Antinuclear antibodies were positive 1:8 (Latex assay (Positive $\geq$ 1:8); LE cells were negative, Coombs test was negative. EEG showed a diffuse generalized alteration in both hemispheres, suggestive of structural damage. The carotid arteriogram revealed irregularities of the internal carotid artery with changes compatible with vasculitis. The posterior cerebral artery could not be visualized while the mid-cerebral and the anterior cerebral arteries were obstructed (Figure 1-2). CT scan showed acute



Figure 1.

Carotid arteriogram showing:
1. Vasculitis changes in the internal carotid artery.
2. Obstruction of the middle and anterior cerebral branches.
3. Obstruction at the level of the internal carotid artery.

*Assistant Professor, Pediatrics and Pediatric Hematology-Oncology, The University of Arkansas for Medical Sciences and Arkansas Children's Hospital, Little Rock, Arkansas.
**Intern, ABC Hospital, Mexico City.
***Head of Clinical Laboratory, ABC Hospital, Mexico City.
****Neurosurgeon, ABC Hospital, Mexico City.
Send correspondence and/or reprint requests to: Morris Kletzel, M.D., Dept. Pediatric Hematology-Oncology, Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Arkansas 72202.
Supported by the Donald McKenzie Foundation, ABC Hospital, Mexico City.



Figure 2.
Lateral view of the carotid arteriogram showing obstruction of the internal carotid artery with lack of visualization of the middle and interior cerebral branches.

thrombotic changes of the left hemisphere. The muscle biopsy was reported to be normal. Patient was diagnosed as having SLE, started on dexamethasone, and discharged with sequelae of a left CVA with right hemiplegia and aphasia. Five months later she was again admitted because of a two week history of asthenia and progressive pallor. Laboratory studies showed a Hb 3.2 gm/dl, Hct 9.0%, WBC 29,000 leukocytes with 99% lymphocytes, platelet count 57,000. Bone marrow aspiration revealed cells consistent with Acute Lymphoblastic Leukemia morphologically with ALL L_1. No immunologic marker studies were performed because of the prolonged steroid treatment. CSF was normal. Chest x-ray and abdominal ultrasound were normal. Patient was started on Vincristine and Prednisone, which resulted in hematologic remission. She then was treated with cranial irradiation and maintenance therapy. She has been alive and in continuous complete remission for more than 24 months.

DISCUSSION

The association of SLE or other autoimmune disorders preceeding leukemia has been reported by Weber, et al.,[2] who studied 151 patients over a 20 year period. He found seven who had both diseases.[2] Hart and Berman reported two additional cases.[3]

The diagnosis of SLE in our patient is based on the guidelines set by Tan, et al.,[4] which state that if four or more of the eleven criteria are met, the patient can be considered to have SLE. The presence in our patient of arthritis, neutropenia, anemia, neurologic abnormalities and a positive ANA establish the diagnosis of SLE. With the exception of the neurologic abnormalities found in this patient, which cannot be explained by leukemia, it is difficult to separate both of these diseases initially, without a bone marrow examination. However, the fact that the patient initially had anemia with moderate leukopenia and responded to steroid therapy, and presently remains in remission with standard antileukemic therapy warrants the consideration that the initial episode was independent of the appearance of the leukemia.

The sequential appearance of these two diseases could be coincidental, a relationship between them has been suggested.[3] Patients with autoimmune diseases may eventually develop leukemia or lymphoma.[3,6] The most accepted hypothesis to explain this association is that both diseases may represent different expressions of the same immunologic abnormality. Dameshek also proposed that the etiology of leukemia is multifactorical and the pre-existence of autoimmune process could be, in some cases, a contributory factor for the development of leukemia.[7] In experimental animals, the role of T1+, SI+ MRBC+ peripheral B cells is not limited to autoimmune hemolytic anemia. These cells are probably involved in SLE.[8,9]

In conclusion, the correlation of these entities may have an immunologic basis. In this particular case, it is difficult to assume that the initial episode of vasculitis and CVA is a component of leukemia.[9,10] The initial presentation of SLE or SLE like syndrome can preceed leukemia by several months, and since it is difficult to establish differences among these two entities, a bone marrow aspiration should be performed when there is an SLE syndrome with hematologic manifestations.

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EDITORIAL

Two Problems — One Perspective

Alfred Kahn, Jr., M.D.

Two serious problems beset organized medicine at this time: the new medical economics and the erosion of medical ethics. To a certain extent, these two problems intertwine. A resolution of the problems may not be possible in the current socioeconomic setting of the United States because the origins of the problems have deep roots extending back into the early 1960's; the rapid widespread health insurance led to the public seeking out physicians more frequently than previously and to a professional class who had a high economic level. The net result of this and other socioeconomic factors caused doctors to spend more and more time with their patients, which was as it should be. There was, however, a price exacted for this increase in patient-physician activity. Physicians which heretofore were the leaders of the health profession gradually lost their dominant role and this has led to a gradual shuffling of the leadership position. Nowadays, the health profession is dominated by insurance companies, the administrative heads of health organizations and certain government officials.

Parallel with the loss of leadership in the health profession, economic changes began to assert themselves in the health field. Physicians rapidly became prosperous as a group during the past 20 to 30 years and considerable inflation was present during a portion of this time. The physician's image changed in the public mind to that of a prosperous person—and this made the physician the target of adverse economic criticism at times. The inflation intensified the belief in some sectors of the public that physician's fees were rising out of proportion to the general level of inflation; it seems fair to state at this point that this was an error in which some of the public confused the rise in the cost of hospital care with the rise in physician's fees. Also, the cost of some medical procedures became costly due to supportive equipment and supportive personnel in the pre, peri and postoperative period.

The confluence of these events supported by a somewhat stagnating economy put heavy pressure on the insurance companies, which for a number of years took a liberal position concerning patient medical and hospital costs, and on the patients' pocketbooks. Ultimately, this led to two new happenings which unquestionably will have a profound effect on the practice of medicine and on patient care. The Federal Trade Commission issued a ruling in 1975 (affirmed by U. S. Supreme Court in 1982) which stated that doctors could advertise; the basis of this was that physicians' fees were too high—and that the American Medical Association had restricted trade. Actually, advertising was contrary to the principles of medical ethics as set forth by the AMA. In Section 5 of an older code of medical ethics from the AMA, it states that a physician should not solicit patients—which meant that the physician should not advertise. This code of medical ethics was not derived as a capricious set of rules but came about as a group of working rules to promote the best possible care of the patient. Since the Federal Trade Commission ruling, the AMA sought court relief but was defeated. Actually, the AMA is said to have stated in 1962 that physicians might advertise provided they supplied only their names and locale of their office, office hours and a limited amount of information necessary for the patient to make some informed judgment as to their choice of physician. Prior to the Federal Trade Commission ruling, physician advertising usually consisted of a small notice in the newspapers or the yellow pages of the telephone directory. Since 1975 physician advertising has gradually increased in amount, scope and character—until in some

instances it is florid. This modern day edict, not a law, broke down a heretofore recognized standard of medical conduct. Economic pressures, so-to-speak, breached the philosophy and guidelines which physicians in this country have followed and considered to be more or less sacrosanct.

Heretofore, the best advertisement for a physician was his reputation as being a fine practitioner, teacher or researcher in the field of medicine. He did not hold forth by printed advertisement, radio or television that he was able to perform certain procedures, therapies or investigations. The basis of seeing a physician is thus gradually changing from a situation in which a physician was recommended for professional knowledge to one in which a physician attracts public attention through self advertising. In one situation, the attractant is professional knowledge and in the other situation there is name recognition through advertising without professional recommendation by a peer group appearing in the advertisement. The point of this whole debate is whether or not professional peers can make a better recommendation of whom to see for a health problem or if a self proclaimed advertisement is a better basis for attracting a patient.

The above is one side of the coin; the obverse side is that the Federal Trade Commission did not capriciously mandate that advertising was permissible; it was done in an effort to contain rising medical costs. The general philosophy back of the regulation permitting advertising was that it would increase competition between physicians. Competition properly channeled is certainly not detrimental, provided it leads to better patient care and stimulates medical research. No one could really object to competition among physicians on philosophical grounds, particularly if there is an oversupply of physicians which may be the case in America at the present time; this would be a way of cutting the cost of medical care by diminishing the number of physicians; economic pressures would push some physicians out of the geographic and practice areas where there was a surplus of physicians rather than to let all the physicians remain in practice despite the surplus and keep their economic level by upping the cost of care to the patient.

The fallout from the fractured code of practice, governmental pressures, and the control of the health profession by so to speak big business (meaning hospitals and insurance companies) has introduced a whole new spectrum of economic options in medicine.

But, they have raised one specter—Are these economic changes and altered codes of medical ethics in the best interest of the patient? Now, we are in the midst of some great changes and no one is wise enough to know if ultimately they are in the best interest of the sick patient and the United States of America—as well as the health profession. There are primary physician networks who will provide patient care which may be prepaid or postpaid; prepayment is attractive as a means of limiting medical costs but in some scenarios it tends to blunt aggressive medical care in an effort to avoid large expenditures of time and money by the organizations providing medical care. HMO's have similar weaknesses and strengths. One must pause to think whether a primary physician is serving his patient's best interest by selecting a specializing physician based on an economic arrangement rather than patient's choice or reputation for some particular area of excellence in practice. Joint ventures between hospitals and groups of physicians are now in the planning stages and in some instances, already commenced; Is the main strength of such a partnership economic or improved health care? Hospitals are buying other hospitals creating a hub and spoke arrangement not very different from the airlines and this is not devoid of detrimental overtones inasmuch as the patient in the outlying hospital going to the hub hospital would have difficulty in obtaining the physician of his choice if he is in another hospital system.

From the foregoing, it is abundantly apparent that the catalyst in the change in medical practice and medical codes is economic pressure. The cost of medical care is very high and some means had to be devised to brake the cost of medical care lest it outgrow the pocketbook of the consumer, according to some observers. Perhaps, there is confusion in the public mind between the costs of physician care and the cost of hospital care but in any event, the end result is that the payments to hospitals, physicians, etc., after an illness—is very high, in fact prohibitively high without insurance or some type of assistance. We are now in a health era supported by a safety net of health insurance. The insurance carriers are rather strained to meet the cost of medical care because of inflation and other economic factors. The future of all these new innovative methods of medical care will have

to be vectored into the new modes of delivery and a future determination of the worth of these new fiscal approaches to the practice of medicine will have to be determined in light of the health and welfare of the citizenry.

There are a few rag-tag observations that cannot be escaped in looking back over the field of medical economics. First of all, did the fight against socialized medicine in the United States in the 1950's lead to a better system of medical delivery in the 1980's. What would have happened if physicians had been less busy and had not abdicated their position as leaders of the health profession—and perhaps devised some better means of patient care? Is the abrogation of the former code of medical ethics regarding advertising going to produce a good end result—in short does the end justify the means? In the long run, is the cost of medical care going to be diminished by the new modes of delivery of health care or are well hidden costs such as a monumental amount of paperwork going to keep medical expenditures at a high level which will simply not show up in the form of a medical bill but rather as higher premiums, higher governmental costs, higher taxes, higher overhead, etc.?

It is a belief of those of us in the medical profession in America that it is our duty to provide excellent and continuously improving medical care. Many of us are concerned that this drive for improved medical care could be blunted by sources outside of the field of medicine and over which physicians have no control, despite the best of intentions by all parties.

"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

E. R. DuVal, M.D.

1836-1885

Edwina Walls, M.L.S.*

Elias Rector DuVal, M.D., more commonly known as E. R., was a pioneer physician of Fort Smith, Arkansas. Born August 13, 1885,[1] he was one of the first white children born there.[2] Of French heritage, his father, William DuVal, moved to Fort Smith from Charlottestown, Virginia in 1825.[3]

DuVal graduated from college at Fayetteville in 1854 and then studied medicine with Dr. T. J. Pollard of that city. In 1858 he earned his M.D. at the University of Pennsylvania.[4]

With the exception of the years spent in obtaining his education and those serving in the military, DuVal spent his entire life in Fort Smith. He was there during the cholera epidemic in 1866, when twenty-five percent of those stricken died. He recorded the cholera epidemic in a pamphlet, *Cholera as it Appeared in Fort Smith, Arkansas, in the Fall of 1866.*[5]

DuVal was a charter member of the Arkansas State Medical Association. He represented Sebastian County at the organizational meeting of the Association held at the Pacific Hotel in Little Rock on November 21, 1870.[6] He served as president of the Arkansas Society in 1874/75 and of the Sebastian County Society in 1878.[7]

In his presidential address in 1874, DuVal spoke of the difficulty of getting politicians to act and of their indifference to the physicians' recommendation for legislation regarding the practice of medicine in the state.

> This indifference probably proceeds from a natural antipathy all legislators entertain for anything pertaining to subjects medical, and their innate and unsubdued prejudice against the doctors and all their enterprises.[8]

Active in civic and fraternal affairs of the day, DuVal was a city alderman of Fort Smith for several terms between 1871 and 1878.[9] He was a Mason of the York Rite degree and for two years served as grand high priest of the state. He served as chairman of the committee on Masonic history and is said to have authored the *History of Masonry in Arkansas* but the writer was unable to locate a copy of the book.[10]

A highly respected citizen, DuVal was honored by his *alma mater* in 1858 with the degree of A.M., and in 1880 the honorary degree of M.D. was bestowed upon him by the Medical Department, Arkansas Industrial University, the first such degree ever conferred by the school.[11]

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*History of Medicine Librarian, University of Arkansas for Medical Sciences Library.

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Category 1 Continuing Medical Education Programs Available in Arkansas

13th ANNUAL LEVY LECTURE

Dr. J. Loren Pitcher will present the 13th Annual Levy Lecture on April 24, 1986. This will be in the Medical Grand Rounds Slot at 12:15 in the Shorey Auditorium. Dr. Pitcher's title is "The Revolution in the Management of Esophageal Varices: Twenty-Five Years of Stemming the Crimson Tide".

Dr. Pitcher is Associate Dean for Clinical Affairs at the University of New Mexico School of Medicine, Professor of Medicine at the University of New Mexico School of Medicine and Chief Medical Officer of the University of New Mexico Medical Center.

Dr. Pitcher will also be presenting at the G. I. Basic Science conference which is held April 24, at 7:30 a.m., in rooms G-108 A & B. His title for that talk will be "Therapeutic Endoscopy in 1986".

INTERDISCIPLINARY MENTAL HEALTH CARE OF THE ELDERLY

Presented by Fred O. Henker, III, M.D. and Cornelia Beck, R.N., Ph.D., *April 30, 8:30 a.m.-4:30 p.m.; May 1, 8:30 a.m.-4:30 p.m.; May 2, 8:30 a.m.-12:00 noon,* University Conference Center, 5 Statehouse Plaza, Little Rock. Twelve and one-half hours Category I credit. Fee: $75. Sponsored by UAMS.

ANESTHESIA UPDATE 1986

Presented by Richard B. Clark, M.D., *May 2, registration 6:30 p.m.; May 3, 7:15 a.m.-5:00 p.m.,* Capital Hotel, Little Rock. Seven hours Category I credit. ASA members and Anesthesia residents free. Non-ASA members $40; CNRA's $20. Sponsored by UAMS.

ARTHRITIS AND BURSITIS—CLINICAL ASPECTS/ PROSTHESIS APPLICATION

Presented by Thomas Brower, M.D., *May 20, 7:00 p.m.,* Education Building, Baxter Regional Hospital, Mountain Home. Two hours Category I credit. Sponsored by Baxter County Regional Hospital.

GRECC CONFERENCE—ASSESSMENT AND MANAGEMENT OF CANCER IN THE ELDERLY

Presented by David A. Lipschitz, M.D., Ph.D., and Ronnie Chernoff, Ph.D., R.D., *June 12, 7:30 a.m.-5:00 p.m.,* Airport East Holiday Inn, Little Rock. Five and one-half hours Category I credit. Fee $50; VA employees $25. Sponsored by UAMS.

ANNUAL CADUCEUS CLUB ALUMNI WEEKEND —SCIENTIFIC SESSION

Presented by Robert W. Bradsher, M.D., *June 14.* Sponsored by UAMS. Time, location, credit hours, etc., to be announced.

SPORTS MEDICINE SEMINAR

June 14. Call the Medical Education Office at Baptist Medical Center, 227-2672, for further information.

EIGHTH ANNUAL FAMILY PRACTICE INTENSIVE REVIEW

Presented by Ben N. Saltzman, M.D., *June 20-22.* Sponsored by UAMS. Time, location, credit hours, etc., to be announced.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category 1 Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Tumor Clinic, fourth Tuesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, fourth Thursday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Gyn-Pathology Conference, second Friday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Pediatric Conference, third Friday, 12:00 p.m. to 1:00 p.m., Union Medical Center.

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology-Mortality Conference, second Thursday, 3:00 p.m., VAMC.
Radiology Conference, third Thursday, 1:00 p.m., VAMC.
ICU Lecture Series, second Friday, 1:30 p.m., VAMC.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pulmonary Conference, each Monday, 3:00 p.m., Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Genetics Conference, each Wednesday, 1:00 p.m., Annex Conference Room.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neuroscience Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
Neuro/Oncology Conference, third Thursday, 8:00 a.m., Second Floor Classroom.
General Pediatrics Seminar, each Friday, 12:00 noon, Second Floor Classroom.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Pathology Conference, each third Tuesday, 3:00 p.m. to 4:00 p.m., Pathology Library.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Surgery Conference, each Thursday, 7:30 a.m. to 8:30 a.m., Conference Room #2.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #1.

LITTLE ROCK — ST. VINCENT INFIRMARY

Pediatric Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
General Medicine Journal Club, first and third Tuesday, 12:00 noon to 1:00 p.m., Medical Affairs Conference Room.
Peripheral Vascular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Cancer Conference, first Wednesday, 12:00 noon to 1:00 p.m., CARTI Auditorium.
Pulmonary Conference, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Cancer Conference, third and fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Education Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 4:00 p.m., UAMS Education Building, Room G/106.
GI Basic Science Conference, each Thursday, 7:30 a.m., UAMS Education Building, Room G/108A&B.
Medicine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medicine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interdisciplinary Gynecologic Cancer Conference, each Friday, 12:30 p.m., UAMS Education Building, Room G106A&B.
OB/Gyn Grand Rounds, each Wednesday, 7:30 a.m., UAMS Education Building, Room G/141B.
Psychiatry Grand Rounds, each Friday, 11:00 a.m., UAMS Shorey Auditorium.
Psychiatry Case Conference, each Friday, 12:00 noon, UAMS Shorey Auditorium.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS ACC Eye Clinic, Room 3/150.
Orthopaedic Fracture Conference, each Tuesday, 7:30 a.m., UAMS Education Building, Room B/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Education Building, Room B/135.
Orthopaedic Grand Rounds, each Tuesday, 10:00 a.m., UAMS Education Building, Room B/135.
Orthopaedic Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Education Building, Room B/135.
Surgical Science Conference, each Saturday, 8:00 a.m., UAMS Education Building, Room G/131.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Education Building, Room G/131.

St. Vincent Urology Grand Rounds, first Tuesday, 5:30 p.m., St. Vincent Infirmary, Education Building, Room 159.
Urology Grand Rounds/Urologic Topics, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Medical Service Teaching Conference, each Thursday, 8:00 a.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.
VA Weekly Cancer Conference (Surgical Service), each Tuesday, 1:00 p.m., LRVA, Room 2D109 and 2D114.

PINE BLUFF — AHEC

Sub-Specialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gynecology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medical Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practice Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conference, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medicine Conference, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Science Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC

Tumor Conference, May 7 and June 2, 7:00 a.m., St. Michael Hospital.
Chest Conference, May 14, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing education by the Accreditation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



THINGS TO COME



April 27-May 2

1986 American Occupational Health Conference. Denver Marriott, Denver, Colorado. Annual scientific and business meetings of the American Occupational Medical Association and the American Association of Occupational Health Nurses. Continuing education offerings. Registration $100.00 member; $150.00 non-member. For more information contact American Occupational Health Conference, 2340 South Arlington Heights Road, Suite 400, Arlington Heights, Illinois 60005; telephone 1-312-228-6850.

May 1

Psychiatric Emergencies. St. Louis State Hospital Complex. 5 hours AMA Category I credit. Sponsored by the Department of Continuing Education, School of Medicine, University of Missouri—Columbia. Registration $45.00. For more information call the Continuing Education Department of the Missouri Institute of Psychiatry at 1-314-644-8804.

May 5-9

Postgraduate Institute for Emergency and Primary Care Physicians, Symposia I, II, and III, and Optional Advanced Emergency Procedures Laboratory. San Diego, California. ER I—May 5-9, 1986; September 22-26, 1986; January 12-16, 1987; and May 4-8, 1987. ER II—August 18-22, 1986; December 8-12, 1986; March 16-20, 1987; and August 17-21, 1987. ER III—June 16-20, 1986; October 27-31, 1986; June 22-26, 1987. For brochure and more information contact Office of Continuing Medical Education, University of California San Diego School of Medicine, M-017, La Jolla, California 92093; telephone 1-619-452-3940.

May 8-9

Fourth Annual Missouri Conference on Alcoholism and Drug Abuse: The Family. The Breckenridge Frontenac, St. Louis, Missouri. Sponsored by the Missouri Institute of Psychiatry of the University of Missouri—Columbia, School of Medicine. 11.5 hours AMA Category I credit. Registration $65.00. For more information call the Continuing Education Department of the Missouri Institute of Psychiatry at 1-314-644-8804.

May 12-16

1986 National Conference on Health Care Leadership and Management. Doubletree Hotel at Fisherman's Wharf, Monterey, California. 18 hours CME credit. Sponsored by the American Academy of Medical Directors. For more infor-

mation contact Sherry Mason, American Academy of Medical Directors, 4830 West Kennedy Boulevard, Suite 648, Tampa, Florida 33609; telephone 1-813-873-2000.

May 31

1986 Plastic Surgery Videoteleconference. Sponsorel by the Plastic Surgery Educational Foundation of the American Society of Plastic and Reconstructive Surgeons and the Hospital Satellite Network. Each conference two hours Category I CME credit. The two hour videoteleconferences include "Rhytidectomy", May 31st; "Myocutaneous Flaps", September 20th; and "Ear Reconstruction", November 22nd. Cost for videotapes $165 for ASPRS/PSEF members; $220 for non-members. For further information write American Society of Plastic and Reconstructive Surgeons, Inc., 233 North Michigan Avenue, Suite 1900, Chicago, Illinois 60601 or call 1-312-856-1818.

June 16-20

Medical Technology Assessment for Health Professionals. Sponsored by the Alfred P. Sloan School of Management, Massachusetts Institute of Technology. CME credit offered. Program will address ways in which technology assessment will affect the use of equipment, procedures and tests in hospitals' current economic environment. For more information contact Director of the Summer Session, Room E19-356, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139; telephone 1-617-253-2101.

August 3-19

Study Tour: Children's Health Care In Central America. Sponsored by the University of Arkansas at Little Rock. Will tour children's health care projects in Guatemala, Honduras, Nicaragua and Costa Rica. Registration approximately $1,200 per person. C.E.U. credits available. For more information and itinerary contact Gene Stanford, Ph.D., Arkansas Children's Hospital, 800 Marshall Street, Little Rock, Arkansas 72202; telephone 1-501-370-1149 (days), 1-501-224-4020 (evenings).

September 17-19

American Cancer Society National Conference on Gynecologic Cancer — 1986. Atlanta Hilton, Atlanta, Georgia. 16½ hours AMA Category I credit. Registration before September 3, 1986: $200.00 physicians, $100.00 other health professionals; Fee after September 3, 1986: $250.00 physicians; $150.00 other health professionals. No registration fee for students, interns, residents, and American Cancer Society Fellows or Career Development Awardees. For more information write American Cancer Society, 90 Park Avenue, New York, New York 10016.



PERSONAL AND NEWS ITEMS

DOCTOR LEADS WORKSHOP

Dr. Scott Fergus of Osceola lead a workshop on methods, detection, cure and treatment of cancer. The workshop is one of a series of workshops that is being sponsored by the Mississippi County Community College.

DOCTOR SPEAKS

Dr. Raymond Wende of Little Rock spoke at the New People's Club meeting at the Baptist Medical Center in Little Rock. The New People's Club is composed of people who have undergone gastric bypass stomach stapling surgery.

DR. SHANNON JOINS MEDICAL STAFF

Dr. Robert F. Shannon of Little Rock has joined the medical staff of The Bridgeway Hospital as director of YouthCare.

NEW OFFICERS NAMED

1986 officers for Lawrence County Medical Society are Dr. Robert Quevillon, President, Dr. Stephen Wilson, Vice President, and Dr. Ralph Joseph, Secretary.

DOCTOR LEADS DISCUSSION

Dr. Donald Purcell of Paragould discussed CAT scans, PET scans and other diagnostic techniques with the Paragould Alzheimer Support Group.

DR. FRANCE CERTIFIED

Dr. Gene France of Little Rock has been certified as a Diplomate of the American Board of Allergy and Immunology.

DOCTOR SPEAKS

Dr. Jim Sharp of Fayetteville recently spoke to the Fayetteville Chapter of the American Association of Retired Persons concerning causes of low vision in the elderly.

DR. KENNEDY HONORED

Dr. Charles Kennedy of North Little Rock was recently honored for 30 years of continuous service as North Little Rock high schools' team physician. Dr. Kennedy was presented a plaque in appreciation by the North Little Rock School Board.

DOCTOR NAMED CHIEF OF STAFF

Dr. Francis Patton of Helena has been named chief of staff of the Helena Hospital.

DOCTOR COORDINATES PROGRAM

Dr. Craig Boisvert of Des Arc conducted a one-day CPR training seminar in conjunction with other activities planned for "Health Month" in March. The seminar, sponsored by the Des Arc Medical Center, was held at the Des Arc High School.

DR. HARRIS RETIRES

Dr. Walter Harris of Danville has retired after 35 years in private practice. Dr. Harris began practicing in Danville in 1951. He was instrumental in founding the Yell County Hospital and has been a guiding factor in its development and in the extension of its diagnostic treatment facilities during the last 30 years. He has also served as chief of staff at the hospital.

DOCTOR SPEAKS

Dr. Lawrence A. Mendelsohn and Dr. Charles Logan of Little Rock spoke at the Arkansas Association of Medical Assistants seminar at St. Vincent Infirmary. Dr. Mendelsohn spoke about hematology and oncology and care of the cancer patient. Dr. Logan discussed lithotripsy and the lithotripter.

DOCTOR INSTRUCTS FOREIGN PHYSICIANS

Dr. Terrence Oddson of Little Rock will be instructing physicians from the People's Republic of China in the use of tomography scanners at St. Vincent Infirmary. St. Vincent Infirmary has been chosen by Technicare Corporation as one of several tomography scanner training sites in the United States. Technicare Corporation is a major supplier of advanced diagnostic equipment to China.

DR. ROGERS RETIRES

Dr. Henry Rogers of Mena is retiring after 39 years in general practice. Dr. Rogers started practicing in Mena in 1947.

DOCTOR APPOINTED TO BOARD

Dr. George E. Malone of Atkins has been appointed to the Pope County Ambulance Board.

DOCTOR LEADS DISCUSSION

Dr. Thomas Atkinson of Siloam Springs discussed osteoporosis at the first session of the "For Women Only" conferences sponsored by the Siloam Springs Memorial Hospital.

DR. FORMBY RETIRES

Dr. Thomas A. Formby has retired after practicing medicine for 35 years. Dr. Formby practiced in Paragould for two years before moving to Searcy where he has practiced for the last 33 years. He was instrumental in the development of the White County Memorial Hospital where he served as chief of staff.

DOCTORS APPOINTED

AMI National Park Medical Center in Hot Springs has appointed Dr. James Campbell as chief of staff, Dr. Thomas Hollis as vice chief of staff and Dr. Paul Tucker as secretary for 1986.





NEW MEMBERS

DR. PAUL BECTON, JR.

Dr. Becton is a new member of the Benton County Medical Society. He is in the practice of Obstetrics/Gynecology at 1116 Poplar Place in Rogers.

Dr. Becton is a 1967 graduate of Baylor University and a 1980 graduate of the University of Arkansas College of Medicine. He served an internship and residency at the University of Arkansas for Medical Sciences.

DR. J. TRENT BEATON

Dr. Beaton has joined the Cross County Medical Society.

Dr. Beaton graduated from the University of Notre Dame in 1978 and the University of Arkansas College of Medicine in 1982. He served in the internship and residency programs of the University of Alabama Medical Center.

Dr. Beaton, is certified in Family Practice. His office address is 158 South Falls Boulevard in Wynne. Dr. Beaton is a native of Wynne.

* * * *

Miller County Medical Society has two new members.

DR. DENNIS O'BANION

Dr. O'Banion, a Thoracic and General Surgeon, is a new member of the Miller County Medical Society. He is a native of Houston, Texas.

Dr. O'Banion is a 1974 graduate of Louisiana Tech University and a 1979 graduate of Louisiana State University School of Medicine in Shreveport. He served an internship and residency at the Louisiana State University Medical Center in New Orleans and a fellowship at Baylor College of Medicine in Houston.

Dr. O'Banion's office is at 300 East Sixth Street in Texarkana.

DR. NORRIS L. NEWTON, JR.

Dr. Newton has joined the Miller County Medical Society. He is a native of Oklahoma City, Oklahoma.

Dr. Newton is a 1978 graduate of Henderson State University and a 1985 graduate of the University of Arkansas College of Medicine. Dr. Newton is in the internship program at the University of Arkansas for Medical Sciences.

* * * *

DR. WILLIAM S. HUBBARD

Dr. Hubbard is a new member of the Craighead-Poinsett County Medical Society.

Dr. Hubbard is a 1973 graduate of the University of Arkansas and a 1980 graduate of the University of Arkansas College of Medicine. He served an internship, residency, and a pulmonary medicine fellowship at the University of Tennessee College of Medicine.

Dr. Hubbard is board certified in Internal Medicine and is associated with the Northeast Arkansas Internal Medicine Clinic in Jonesboro. He is a native of Memphis, Tennessee.

DR. CHARLES JENNINGS

Dr. Jennings, a native of Muskogee, Oklahoma, has joined the Crawford County Medical Society.

Dr. Jennings is a 1978 graduate of the Massachusetts Institute of Technology and a 1982 graduate of the University of Oklahoma College of Medicine. He served an internship and residency through the University of Oklahoma Tulsa Medical College program.

Dr. Jennings practices Internal Medicine at 2020 Chestnut, Suite 108 in Van Buren.

DR. LARKUS H. PESNELL

Dr. Pesnell, a native of Shreveport, Louisiana, has joined the Union County Medical Society. He is an Anesthesiologist at the Union Medical Center.

Dr. Pesnell is a 1962 graduate of the University of Arkansas at Fayetteville and a 1967 graduate of the University of Arkansas College of Medicine. He served an internship at the City of Memphis Hospital in Memphis, Tennessee, and a residency in Anesthesiology at the Texas Tech Health Sciences Center in Lubbock, Texas. Dr. Pesnell served as a flight surgeon in the United States Air Force.

DR. CHARLES SMITH

Dr. Smith, a native of Fort Smith, has joined the Yell County Medical Society.

Dr. Smith is in Family Practice at the Dardanelle Clinic on Highway 22 in Dardanelle.

Dr. Smith is a 1979 graduate of the University of Arkansas at Fayetteville and a 1982 graduate of the University of Arkansas College of Medicine. He served a three year residency at the Area Health Education Center in Fort Smith.

DR. HERBERT T. SMITH

Dr. Smith is a new member of the Sebastian County Medical Society. He is a native of Cleveland, Ohio.

Dr. Smith is a 1948 graduate of the University of Houston and a 1952 graduate of Baylor College of Medicine in Houston. He served an internship at the Brooke Army Medical Center, Fort Sam Houston, in San Antonio.

Dr. Smith is board certified in Family Practice. He is affiliated with the Arkansas Health Education Center in Fort Smith.

DR. JOE F. TURNBOW

Dr. Turnbow, a native of Little Rock, has joined the Union County Medical Society.

Dr. Turnbow received his pre-medical education from Hendrix College in Conway and the University of Arkansas at Fayetteville. He is a 1975 graduate of the University of Arkansas College of Medicine. Dr. Turnbow served an internship at the Presbyterian Medical Center in Denver, Colorado.

Dr. Turnbow's office is at 410 East 10th in El Dorado. Dr. Turnbow's practice is in Emergency Medicine.



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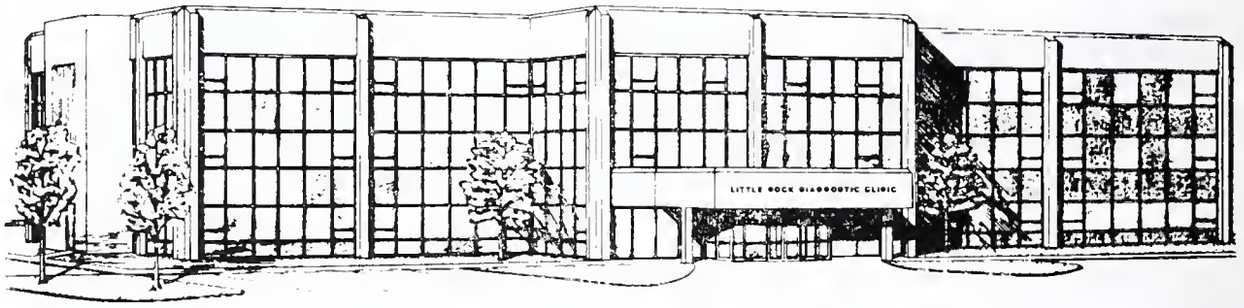
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Brief Summary of Prescribing Information.

Indications and Usage: Management of anxiety disorders or short-term relief of symptoms of anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with stress of everyday life usually does not require treatment with an anxiolytic.

Effectiveness in long-term use, i.e., more than 4 months, has not been assessed by systematic clinical studies. Reassess periodically usefulness of the drug for the individual patient.

Contraindications: Known sensitivity to benzodiazepines or acute narrow-angle glaucoma.

Warnings: Not recommended in primary depressive disorders or psychoses. As with all CNS-acting drugs, warn patients not to operate machinery or motor vehicles, and of diminished tolerance for alcohol and other CNS depressants.

Physical and Psychological Dependence: Withdrawal symptoms like those noted with barbiturates and alcohol have occurred following abrupt discontinuance of benzodiazepines (including convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Addiction-prone individuals, e.g. drug addicts and alcoholics, should be under careful surveillance when on benzodiazepines because of their predisposition to habituation and dependence. Withdrawal symptoms have also been reported following abrupt discontinuance of benzodiazepines taken continuously at therapeutic levels for several months.

Precautions: In depression accompanying anxiety, consider possibility for suicide.

For elderly or debilitated patients, initial daily dosage should not exceed 2mg to avoid oversedation. Terminate dosage gradually since abrupt withdrawal of any antianxiety agent may result in symptoms like those being treated: anxiety, agitation, irritability, tension, insomnia and occasional convulsions. Observe usual precautions with impaired renal or hepatic function. Where gastrointestinal or cardiovascular disorders coexist with anxiety, note that lorazepam has not been shown of significant benefit in treating gastrointestinal or cardiovascular component. Esophageal dilation occurred in rats treated with lorazepam for more than 1 year at 6mg/kg/day. No effect dose was 1.25mg/kg/day (about 6 times maximum human therapeutic dose of 10mg/day). Effect was reversible only when treatment was withdrawn within 2 months of first observation. Clinical significance is unknown, but use of lorazepam for prolonged periods and in geriatrics requires caution and frequent monitoring for symptoms of upper G.I. disease. Safety and effectiveness in children under 12 years have not been established.

ESSENTIAL LABORATORY TESTS: Some patients have developed leukopenia, some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver function tests are recommended during long-term therapy.

CLINICALLY SIGNIFICANT DRUG INTERACTIONS: Benzodiazepines produce CNS depressant effects when administered with such medications as barbiturates or alcohol.

CARCINOGENESIS AND MUTAGENESIS: No evidence of carcinogenic potential emerged in rats during an 18-month study. No studies regarding mutagenesis have been performed.

PREGNANCY: Reproductive studies were performed in mice, rats, and 2 strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At 40mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses. Clinical significance of these findings is not known. However, increased risk of congenital malformations associated with use of minor tranquilizers (chlordiazepoxide, diazepam and meprobamate) during first trimester of pregnancy has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, use of lorazepam during this period should almost always be avoided. Possibility that a woman of child-bearing potential may be pregnant at institution of therapy should be considered. Advise patients if they become pregnant to communicate with their physician about desirability of discontinuing the drug. In humans, blood levels from umbilical cord blood indicate placental transfer of lorazepam and its glucuronide.

NURSING MOTHERS: It is not known if oral lorazepam is excreted in human milk like other benzodiazepines. As a general rule, nursing should not be undertaken while on a drug since many drugs are excreted in milk.

Adverse Reactions, if they occur, are usually observed at beginning of therapy and generally disappear on continued medication or on decreasing dose. In a sample of about 3,500 anxious patients, most frequent adverse reaction is sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%) and unsteadiness (3.4%). Less frequent are disorientation, depression, nausea, change in appetite, headache, sleep disturbance, agitation, dermatological symptoms, eye function disturbance, various gastrointestinal symptoms and autonomic manifestations. Incidence of sedation and unsteadiness increased with age. Small decreases in blood pressure have been noted but are not clinically significant, probably being related to relief of anxiety.

Transient amnesia or memory impairment has been reported in association with the use of benzodiazepines.

Overdosage: In management of overdosage with any drug, bear in mind multiple agents may have been taken. Manifestations of overdosage include somnolence, confusion and coma. Induce vomiting and/or undertake gastric lavage followed by general supportive care, monitoring vital signs and close observation. Hypotension, though unlikely, usually may be controlled with Levarterenol Bitartrate Injection U.S.P. Usefulness of dialysis has not been determined.

Ativan® (IV) for (lorazepam) Anxiety

DOSAGE: Individualize for maximum beneficial effects. Increase dose gradually when needed, giving higher evening dose before increasing daytime doses. Anxiety, usually 2-3mg/day given b.i.d. or t.i.d.; dosage may vary from 1 to 10mg/day in divided doses. For elderly or debilitated, initially 1-2mg/day; insomnia due to anxiety or transient situational stress, 2-4mg h.s.

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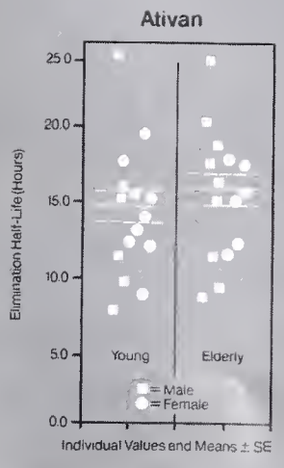
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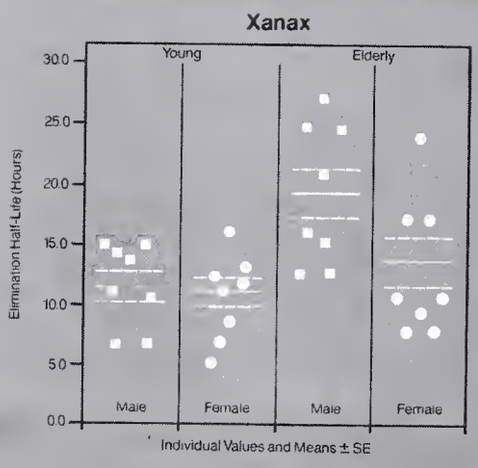
among leading benzodiazepines, has proof that its pharmacokinetics are not significantly altered by age.[1]

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References:
1. Greenblatt DJ: Clinical study, pharmacokinetics and bioavailability in the elderly, Ativan® (lorazepam). Data on file, Wyeth Laboratories.
2. Greenblatt DJ, Allen MD, Locniskar A, et al: Lorazepam kinetics in the elderly. Clin Pharmacol Ther 26:103, 1979.
3. Greenblatt DJ, Divoll M, Abernethy DR, et al: Alprazolam kinetics in the elderly. Arch Gen Psychiatry 40:287, 1983.

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See important information on preceding page.

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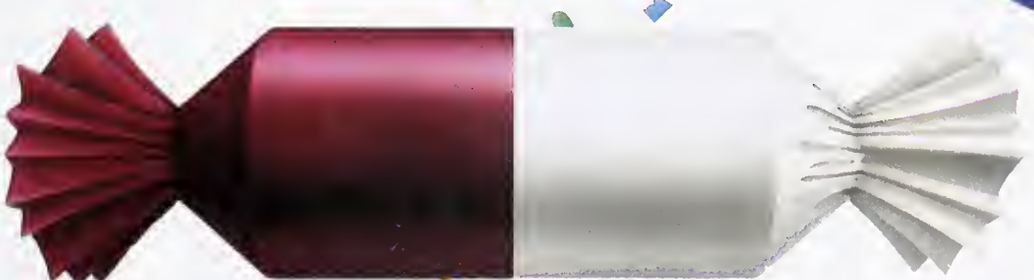
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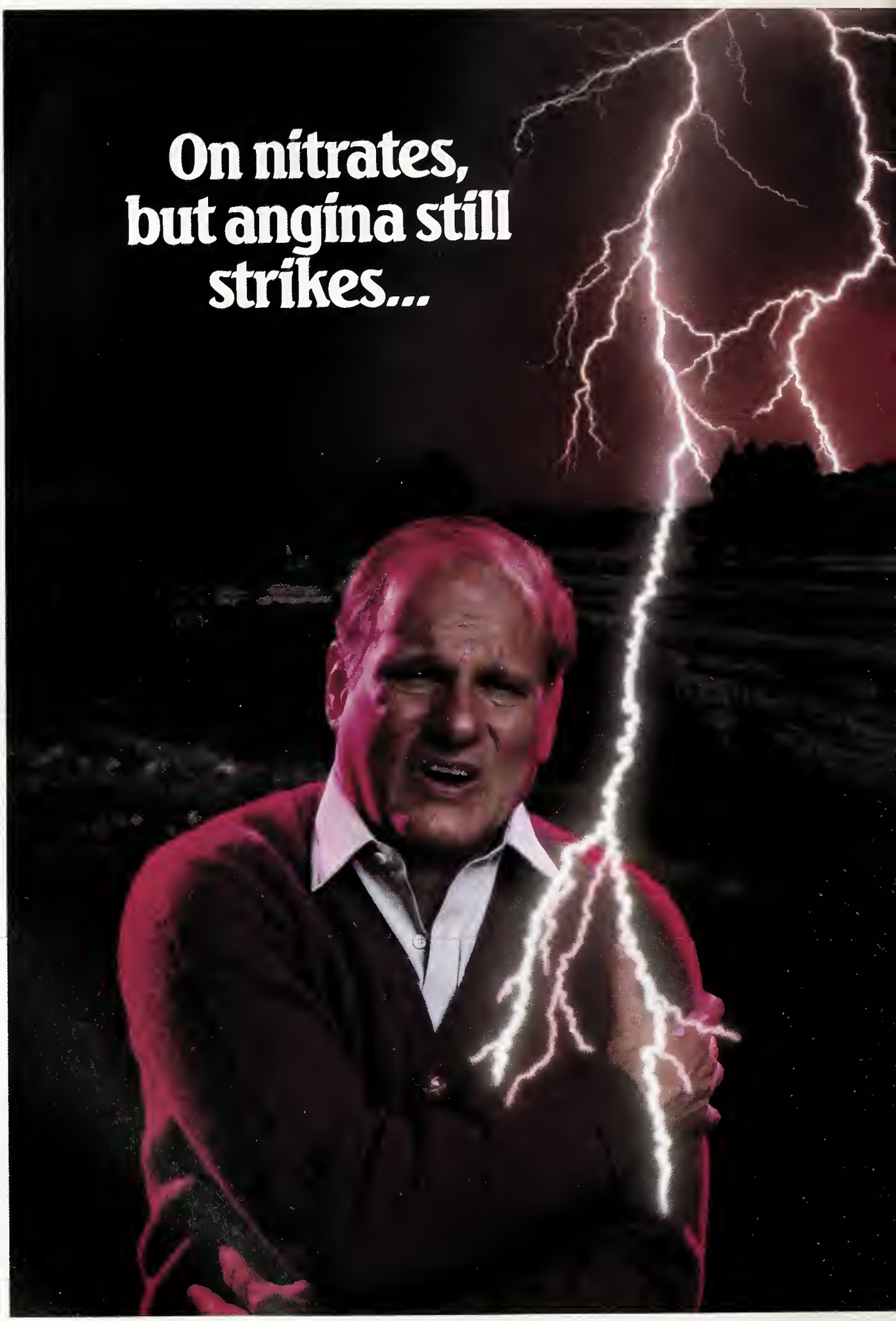
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Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C*: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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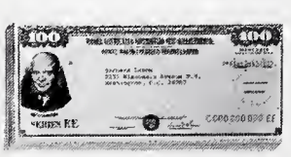


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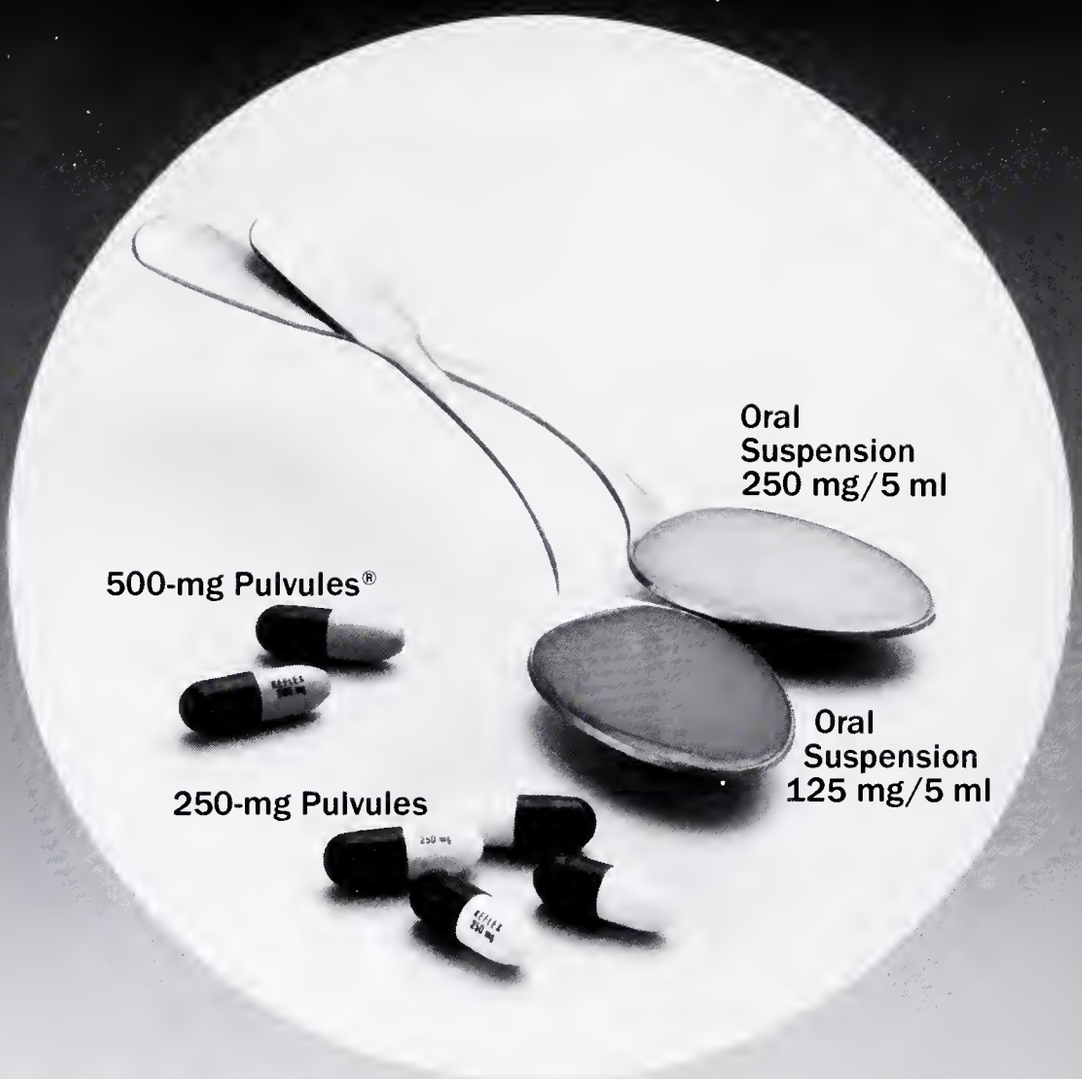
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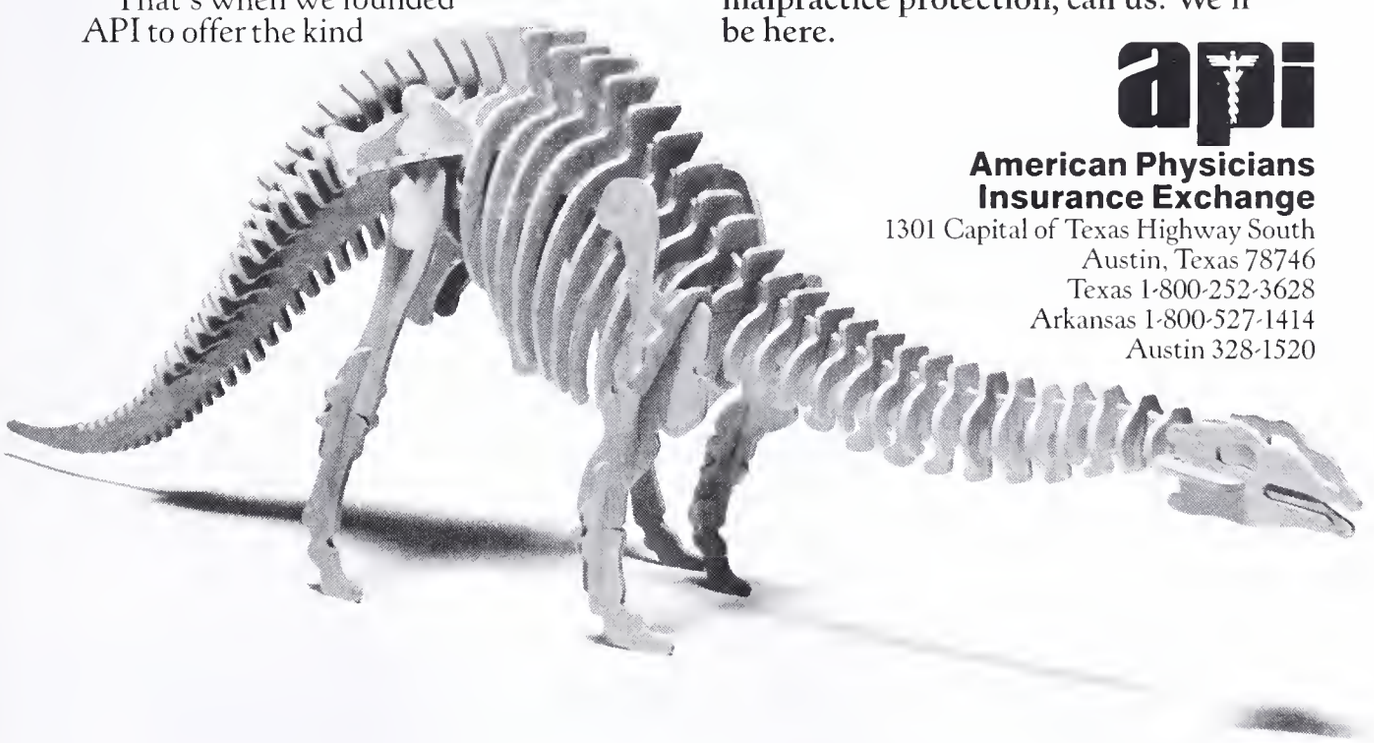
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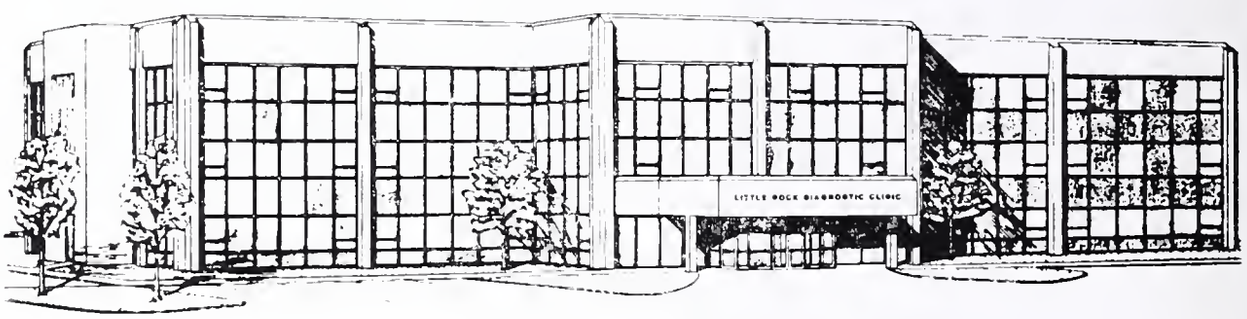
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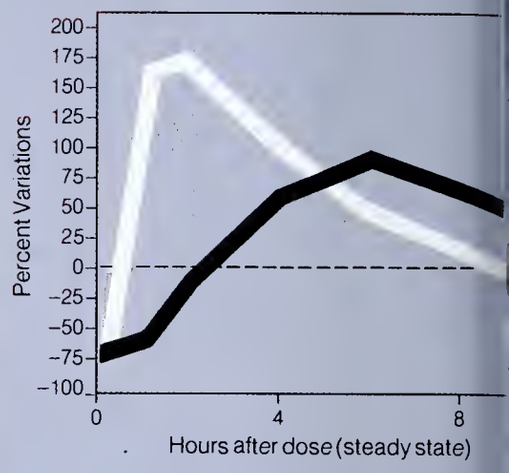
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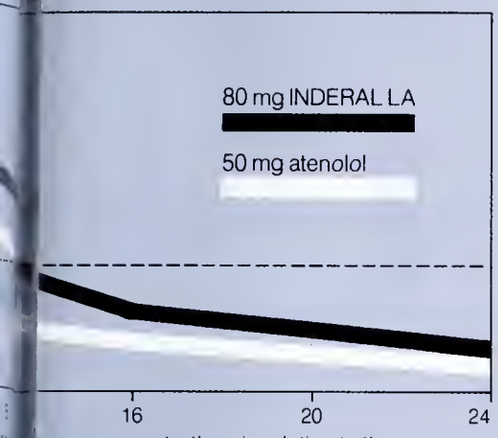
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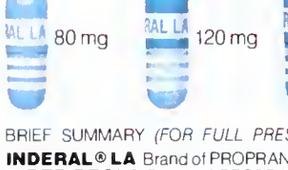
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INDERAL LA AND INDERIDE LA Capsules should not be considered simple mg-for-mg substitutes for INDERAL and INDERIDE Tablets. Please see package circulars.

CONTRAINDICATIONS

Propranolol hydrochloride (INDERAL® LA): Propranolol is contraindicated in. 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block; 3) bronchial asthma; 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with propranolol.

Hydrochlorothiazide: Hydrochlorothiazide is contraindicated in patients with anuria or hypersensitivity to this or other sulfonamide-derived drugs.

WARNINGS

Propranolol hydrochloride (INDERAL® LA): CARDIAC FAILURE: Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated, and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or propranolol should be discontinued (gradually, if possible)

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction following *abrupt* discontinuance of propranolol therapy. Therefore, when discontinuance of propranolol is planned the dosage should be gradually reduced and the patient carefully monitored. In addition, when propranolol is prescribed for angina pectoris, the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If propranolol therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute propranolol therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

Nonallergic Bronchospasm (eg, chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD, IN GENERAL, NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution, since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

DIABETES AND HYPOGLYCEMIA: Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin. Hypoglycemic attacks may be accompanied by a precipitous elevation of blood pressure.

Hydrochlorothiazide: Thiazides should be used with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. In patients with impaired renal function, cumulative effects of the drug may develop.

Thiazides should also be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte balance may precipitate hepatic coma.

Thiazides may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic-blocking drugs.

Sensitivity reactions may occur in patients with a history of allergy or bronchial asthma.

The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.

PRECAUTIONS

Propranolol hydrochloride (INDERAL® LA): GENERAL: Propranolol should be used with caution in patients with impaired hepatic or renal function. Propranolol is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that propranolol may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

CLINICAL LABORATORY TESTS: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs, such as reserpine should be closely observed if propranolol is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity, which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies, in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

PREGNANCY: Pregnancy Category C. Propranolol has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximal recommended human dose. There are no adequate and well-controlled studies in pregnant women. Propranolol should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Once-daily INDERIDE® LA

Each capsule contains propranolol HCl (INDERAL® LA), 80 mg, 120 mg, or 160 mg, and hydrochlorothiazide, 50 mg



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NURSING MOTHERS: Propranolol is excreted in human milk. Caution should be exercised wh propranolol is administered to a nursing mother.

PEDIATRIC USE: Safety and effectiveness in children have not been established.

Hydrochlorothiazide: GENERAL: Periodic determination of serum electrolytes to dete possible electrolyte imbalance should be performed at appropriate intervals.

All patients receiving thiazide therapy should be observed for clinical signs of fluid or electrol imbalance, namely: Hyponatremia, hypochloremic alkalosis, and hypokalemia. Serum and uri electrolyte determinations are particularly important when the patient is vomiting excessively receiving parenteral fluids. Medication such as digitalis may also influence serum electrolyte Warning signs irrespective of cause are: Dryness of mouth, thirst, weakness, lethargy, drowsines restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, a gastrointestinal disturbances such as nausea and vomiting.

Hypokalemia may develop, especially with brisk diuresis, when severe cirrhosis is present, during concomitant use of corticosteroids or ACTH.

Interference with adequate oral electrolyte intake will also contribute to hypokalemia. Hyp kalemia can sensitize or exaggerate the response of the heart to the toxic effect of digita (eg, increased ventricular irritability). Hypokalemia may be avoided or treated by use of potassiu supplements, such as foods with a high potassium content.

Any chloride deficit is generally mild and usually does not require specific treatment, exce under extraordinary circumstances (as in liver or renal disease). Dilutional hyponatremia may occ in edematous patients in hot weather; appropriate therapy is water restriction, rather than admin tration of salt, except in rare instances when the hyponatremia is life-threatening. In actual s depletion, appropriate replacement is the therapy of choice.

Hyperuricemia may occur or frank gout may be precipitated in certain patients receiving thiaz therapy.

Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Diabet mellitus which has been latent may become manifest during thiazide administration.

If progressive renal impairment becomes evident, consider withholding or discontinuing diure therapy.

Thiazides may decrease serum PBI levels without signs of thyroid disturbance.

Calcium excretion is decreased by thiazides. Pathologic changes in the parathyroid gland w hypercalcemia and hypophosphatemia have been observed in a few patients on prolong thiazide therapy. The common complications of hyperparathyroidism, such as renal lithiasis, bo resorption, and peptic ulceration, have not been seen. Thiazides should be discontinued bef carrying out tests for parathyroid function.

DRUG INTERACTIONS: Thiazide drugs may increase the responsiveness to tubocurarine.

The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patie Thiazides may decrease arterial responsiveness to norepinephrine. This diminution is not sufficie to preclude effectiveness of the pressor agent for therapeutic use.

PREGNANCY: Pregnancy Category C. Thiazides cross the placental barrier and appear in cor blood. The use of thiazides in pregnancy requires that the anticipated benefit be weighed agai possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytope and possibly other adverse reactions which have occurred in the adult.

NURSING MOTHERS: Thiazides appear in human milk. If use of the drug is deemed essent the patient should stop nursing.

PEDIATRIC USE: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Propranolol hydrochloride (INDERAL® LA): Most adverse effects have been mild a transient and have rarely required the withdrawal of therapy.

Cardiovascular: Bradycardia; congestive heart failure; intensification of AV block; hypotens paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Rayna type.

Central Nervous System: Lightheadedness; mental depression manifested by insom lassitude, weakness, fatigue, reversible mental depression progressing to catatonia; vis disturbances; hallucinations; an acute reversible syndrome characterized by disorientation time and place; short-term memory loss; emotional lability; slightly clouded sensorium, a decreased performance on neuropsychometrics.

Gastrointestinal: Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, con pation; mesenteric arterial thrombosis; ischemic colitis.

Allergic: Pharyngitis and agranulocytosis; erythematous rash; fever combined with aching a sore throat; laryngospasm and respiratory distress.

Respiratory: Bronchospasm.

Hematologic: Agranulocytosis; nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reporte

Miscellaneous: Alopecia, LE-like reactions; psoriasiform rashes; dry eyes; male impotence, a Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the s serous membranes, and conjunctivae reported for a beta blocker (practolol) have not be associated with propranolol.

Hydrochlorothiazide:

Gastrointestinal: Anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipat jaundice (intrahepatic cholestatic jaundice); pancreatitis; sialadenitis.

Central Nervous System: Dizziness, vertigo; paresthesias; headache; xanthopsia.

Hematologic: Leukopenia, agranulocytosis; thrombocytopenia; aplastic anemia.

Cardiovascular: Orthostatic hypotension (may be aggravated by alcohol, barbiturates narcotics).

Hypersensitivity: Purpura, photosensitivity; rash; urticaria, necrotizing angiitis (vascu cutaneous vasculitis), fever, respiratory distress, including pneumonitis; anaphylactic reaction

Other: Hyperglycemia, glycosuria, hyperuricemia, muscle spasm; weakness; restlessne transient blurred vision.

Whenever adverse reactions are moderate or severe, thiazide dosage should be reduced therapy withdrawn.

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1. Data on file, Ayerst Laboratories. **2.** Ravid M, Lang R, Jutrin I: The relative antihyperten potency of propranolol, oxprenolol, atenolol, and metoprolol given once daily. *Arch Intern M* 1985;145:1321-1323. **3.** Sumiye L, Vivian AS, Frisof KB, et al: Potassium loss associated hydrochlorothiazide versus chlorthalidone. *Clin Ther* 1981;4:308-320. **4.** Ram CVS, Garrett Kaplan NM: Moderate sodium restriction and various diuretics in the treatment of hyperten *Arch Intern Med* 1981;141:1015-1019.

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Opportunities to Practice Medicine in Arkansas

RUSSELLVILLE. Opportunities are presently available in anesthesiology, neurology and pediatrics. Located 75 miles west of Little Rock, Russellville has a service area of around 72,000. The fully accredited hospital has a broad range of services including a 12-bed intensive care unit, nuclear medicine, physical therapy, and many others. Currently over 16 medical specialties are represented by the medical staff. If needed, American Medical International can provide financial assistance to the relocating physician.

YELLVILLE. Opportunities exist in the fields of family or general practice and internal medicine. There is a guaranteed income the first year at professional rates competitive with Little Rock and Memphis, Tennessee.

The area is served by the Central Ozarks Medical Center which is a modern, 59-bed community hospital. Since June 1982, Central Ozarks Medical Center has been managed under a long term lease by Community Care Systems, Inc. of Boston. Major renovation and new physicians have been added since 1982 to bring quality patient care to the community. The hospital has 4 ICU/CCU beds, a new 3-bed emergency room and a 2-room operating suite. Five family and general practitioners are on the active staff. Twenty-five specialists are on the consulting staff. Referral hospitals are located in Mountain Home 24 miles away and in Harrison, 27 miles away.

Yellville and Marion County, located in northcentral Arkansas, have a population of 1,200 and 11,000, respectively. The trade area is approximately 15,000. Yellville is located 135 miles from Little Rock and 95 miles from Springfield, Missouri.

DUMAS. Population 7,000 with a trade area population of 30,000. Seven physicians now practice in Dumas and are aiding in the effort to obtain additional general and family practitioners, an internist, and a pediatrician. New ultra modern facilities are near the 50-bed hospital. Dumas is 40 miles from Pine Bluff and 80 miles from Little Rock.

HOPE. Practice opportunities exist in Hope in the fields of anesthesiology, internal medicine, ophthalmology, orthopaedic surgery, otorhinolaryngology, and radiology. Located in southwest Arkansas, Hope has a population of 11,000.

Medical Park Hospital is a 75-bed general acute care facility serving Hope and the surrounding communities. The hospital is a full service health care center with a comprehensive range of medical/surgical services including 24 hours a day emergency service with full-time physician coverage on weekends. Other services include intensive/coronary care, nuclear medicine, physical therapy, and ultrasound. Specialties currently represented include gynecology, urology, pediatrics, internal medicine, pathology, radiology, orthopedics, and family practice.

HORATIO. The opportunity exists for a family practitioner or general practitioner to establish a practice in Horatio located on State Highway 41 in southwest Arkansas. Horatio is 51 miles north of Texarkana, has a population of 1,000 and a service area population of 5,000-7,000.

Currently there are no physicians in Horatio. The community hospital at DeQueen is a 20 minute drive from Horatio. This is a 120-bed hospital owned by Hospital Corporation of America. An extensive renovation of the emergency room and the addition of a CT scanner is approved and should be completed soon.

SILOAM SPRINGS. Siloam Springs is located in the extreme northwest corner of the state. Population 8,000. Service area 60,000. Memorial Hospital, a 73-bed community hospital, is actively recruiting for obstetricians/gynecologists and orthopaedic surgeons. The hospital offers a range of ancillary services with out-patient and home health care among them.

LAVACA. Population 1,092. Lavaca is located 15 miles east of Fort Smith. With no physicians practicing in Lavaca, an excellent opportunity exists for a family practitioner. A percentage type financial arrangement is offered. A downtown building will be converted into a clinic.

LITTLE ROCK. The opportunity exists in Little Rock for a general practitioner, family practitioner, or surgeon. A full time position is available in a group of two medical clinics in Little Rock to handle general medical cases, minor emergencies and industrial medicine. In general, the physician will perform the duties of a clinical physician. Salary for duties performed for services rendered is between $50,000 and $60,000 per year and negotiable. Other benefits are also being offered.

OSCEOLA. Opportunities exist for physicians in the fields of obstertics and gynecology, orthopaedic surgery, otorhinolarygology and urology. Incoming physicians are provided with personnel, equipment, exam furniture, office furniture, expendables, health and professional liability insurance, accounting and collections, tax and investment advice and much more. There is no investment and a substantial guaranteed income is provided.

The Mississippi County Hospital is currently involved in a program to construct new office facilities adjacent to the hospital, specifically designed for the individual practitioner. Each site will have a physician's office and at least three fully equipped examination rooms. There are presently 9 physicians practicing full-time in Osceola with an additional five courtesy staff members representing specialty service.

Located in northeast Arkansas, Osceola in Mississippi County has a population of 9,000 with the county population of 58,000. The trade area is a conservative 40,000.

MENA. Population 5,154; county population 17,007. Mena is 85 miles from Fort Smith and 77 miles from Hot Springs, where most specialties are represented. There is a very good opportunity to set up a practice in Mena. The town presently has four family practitioners, three general practitioners, one internist, and one radiologist. The medical community feels there is a desperate need for specialists, i.e., surgeons, internists, orthopaedists, urologists, and family practitioners. In addition, two physicians near retirement age would welcome an affiliation with a younger family physician. There is a new 57-bed, all private rooms, accredited general hospital and two nursing homes with a total bed capacity of 174.

For more information contact the Physician Placement Service, Arkansas Medical Society, Post Office Box 5776, Little Rock, Arkansas 72215.

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JAMES M. KOLB, JR., M.D., F.A.C.S.*†
501 968-2124

ROBERT H. MAY, M.D.*†
501 968-7711

*Diplomate, American Board of Orthopaedic Surgery
†Fellow, American Academy of Orthopaedic Surgeons

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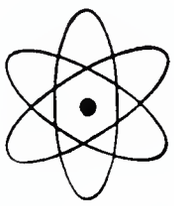
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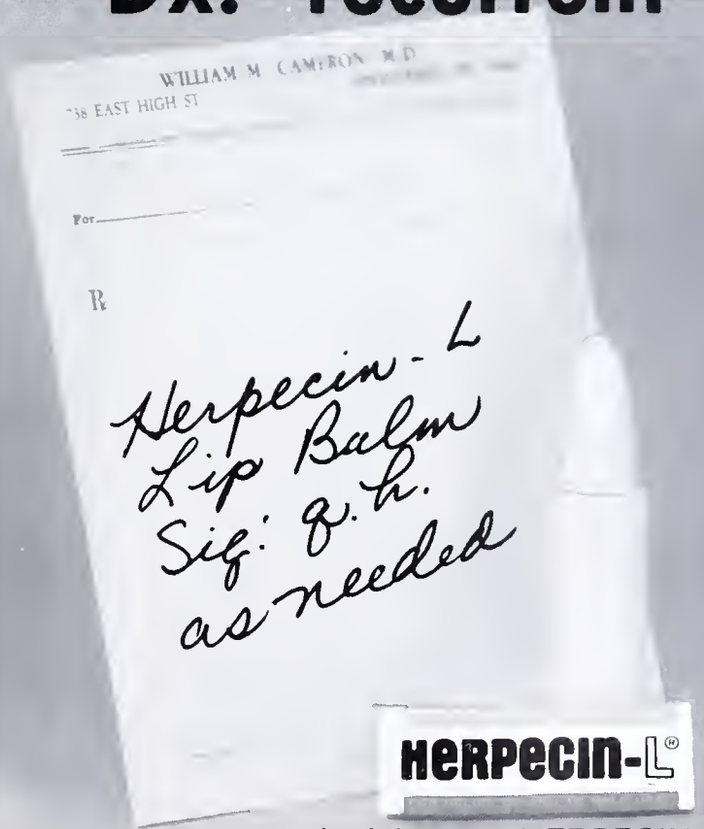
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Transitional Cell Carcinoma of the Urinary Bladder in Patients Under Thirty-Five Years of Age

Amer Z. Al-Juburi, M.D.,* and Harry C. Miller, M.D.**

ABSTRACT

Thirteen cases of transitional cell carcinoma of the bladder in patients under thirty-five years of age were reviewed. This disease in such patients had a low grade of activity and did not show recurrence during a five year follow up period. The main symptom was hematuria. The location and appearance of these tumors were similar to those seen in older patients. Transitional cell carcinoma of the bladder should be considered among patients under 35 with hematuria.

INTRODUCTION AND METHODS

Transitional cell carcinoma (TCC) of the urinary bladder affects some 21,000 new patients each year in the United States. It accounts for at least 9,000 deaths. The mean age of diagnosis is roughly 68 years. The incidence of the condition in a population over the age of thirty-five is close to 20 per 100,000. Under 35, it occurs in 4 per 100,000.[1,2]

While TCC is clearly a disease of older people, it does occur rarely in patients 35 and under. We have reviewed charts of patients with TCC of the bladder at the George Washington University Hospital and its adult affiliated institutions in order to characterize similarities and differences of the disease in patients under 35 years old. Patients under age 35 with TCC of the urinary bladder were identified and data from their charts were examined. Medical records for the years 1975-1980 formed the basis for this study. We also reviewed the medical records of George Washington University Hospital prior to 1975 going back to 1956 and found three additional cases of TCC under 35 years of age, but the data on these cases were incomplete and not included in this analysis. None of these three excluded cases contained data significantly different from the 13 cases between 1975 and 1980.

RESULTS

The ages of the thirteen patients ranged from 16 to 34 years, the majority being in the first half of their twenties. There were eight males and five females, eleven whites and two blacks. Seven patients were smokers, and six had no history of smoking (Table 1). None had a history of industrial, environmental, or chemical exposure with the single exception of one patient who had worked during two summer vacations in a plant in which he was closely exposed to benzene.

TABLE 1
DISTRIBUTION OF 13 PATIENTS WITH TCC OF THE BLADDER

Sex	No. Patients	% Patients
Male	8	62
Female	5	38
Total	13	100
Race	**No. Patients**	**% Patients**
White	11	85
Black	2	15
Total	13	100
	No. Patients	**% Patients**
Smoker	7	54
Non-Smoker	6	46
Total	13	100

The most common presenting symptom seen in 10 out of 13 (76.0%) was hematuria. Other symptoms were mainly bladder irritative symptoms such as frequency and dysuria which were reported in 2 (15.3%) of the cases. In one patient the tumor was an incidental unexpected finding with no symptoms (Table 2).

*University of Arkansas for Medical Sciences, Little Rock, Arkansas.
**Department of Urology, George Washington University, Washington, D. C.
Direct correspondence to: Dr. Amer Z. Al-Juburi, University of Arkansas for Medical Sciences, Department of Urology, Slot 540, 4301 West Markham, Little Rock, Arkansas 72205.

TABLE 2

PRESENTING SYMPTOMS OF TCC OF THE BLADDER IN 13 PATIENTS UNDER 35 YEARS

Symptom	No. Patients	% Patients
Hematuria	10	76.9
Bladder Irritative	2	15.3
None	1	7.8
Total	13	100

Intravenous urograms were normal in seven patients, showed a filling defect in two, a renal stone in one, and were not reported in three. All urine cultures were sterile except for one which grew E. coli greater than 10^5 cells/ml. Cystoscopy of these 13 patients revealed lesions that were similar in location to those usually seen in an older age group with TCC of the bladder; i.e., on the posterior bladder wall and/or in relation to the ureteral orifices. All of the 13 patients presented initially with a single tumor. In all of them, the pathological reports indicated Grade I and II lesions. There was no correlation between the size of the tumor and the pathological grade or stage.

Follow up of these 13 patients was similar to that in the older patients. The patient was seen every three months for two years, then every four months for two years, and thereafter, to be continued every six to twelve months for the rest of their lives. The usual follow up consisted of inquiry of the patient about any new symptoms, physical examination, urine collection for identification of infection or malignant cells, and cystoscopic examination. Four patients were followed for four to five years, five patients for two to four years, three patients for less than two years, and one patient was lost to follow up. None of the patients had a recurrence during the follow up period.

DISCUSSION

Transitional cell carcinoma of the urinary bladder has been reported rarely in persons under the age of 35. Deming in 1924 was credited with having reported the first such patient.[3] Since that time, 186 cases of TCC in patients under 35 have been recorded in the literature.[4] In this age group, TCC of the bladder has been considered a relatively benign disease with an extremely low recurrence rate. In contrast, TCC of the bladder in an older age group has a recurrence rate of 46-70%.[2,4]

In spite of the apparent benign character of bladder TCC, one must be very cautious in predicting the natural history of the TCC in patients under 35 years. Transitional cell carcinoma is a malignant condition and potentially fatal. Delay in diagnosis is dangerous at any age. Hematuria, which is the primary symptom even in young patients, should be evaluated completely at any age. The reason for these young individuals developing bladder tumors is unknown. Seemingly, these patients have not had long enough exposure to carcinogens to develop bladder cancer. We believe that the condition is probably caused by multiple factors. It may be that, left alone, these tumors would grow slowly and present years later as larger and much more serious lesions.

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KIRCHNOFF, FRED 456 24 9438 4E
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X-ray
Pathology

History of the Department of Surgery at the University of Arkansas

Gilbert S. Campbell, M.D.*

What a beginning! The first Chairman of the Department of Surgery at the University of Arkansas School of Medicine was a Connecticut Yankee. His successors include an outstanding surgeon from the Mayo Clinic who made memorable contributions to surgical physiology, a Princeton (B.A.) and Johns Hopkins (M.D.) graduate who was a founder of one of the first pre-paid medical and hospital service plans in America, and the first *full-time* head of surgery who announced his resignation in both Little Rock newspapers during a heated town-gown controversy. The years from 1879 to 1986 covered in this review saw tremendous advances in surgery.

W. David Baird's book entitled, *Medical Education in Arkansas 1879-1978,* chronicles events leading to the establishment of the Medical Department of Arkansas Industrial University in 1879 which was organized to make money for its eight physician proprietors.

P. O. Hooper was Founder and first Dean of Arkansas' medical school. He was the first President of the Arkansas State Medical Association and presided over the AMA meeting in 1883 as its Vice-President. Dr. Hooper served as Head of the College of Medicine in Arkansas from 1879-1886 when he left to become Superintendent of the Arkansas State Lunatic Asylum. One wonders whether the chronology involved is an early example of post hoc ergo propter hoc or vice versa.

Edwin Bentley (1824-1917) was an associate of Hooper and was the first Head of Surgery at this struggling new medical school. Bentley was a native of Connecticut and a graduate of the College of Physicians and Surgeons in New York City. Bentley served with the Union Forces during the Civil War and was assigned to the United States Army of the Potomac. In the post-war reconstruction days, he continued his career as an Army surgeon and was transferred to Little Rock in 1878. Dr. Bentley occupied the Chair of Surgery from 1880-1911. The first M.D. awarded by the medical school was granted on March 2, 1880 and Dr. Bentley delivered the Valedictory Address to a graduating class of one, namely Tom Pinson. After Bentley delivered a Valedictory Address, in which he gave a most eloquent and exhaustive review of the history and progress of medicine and surgery, Dr. Hooper, the new Dr. Pinson, the governor of the state and others adjourned to Dr. Bentley's home for a reception in honor of its first graduate.

Dr. Bentley divided his time between the Medical School and the Little Rock Barracks (serving as post-surgeon) until his retirement from the military in 1888. His writings include "report of a case of aneurysm of the left popliteal artery treated by ligature of the femoral artery—result, cure, subsequent discharge from the service" published in a report to the Surgeon-General of the Army, Washington, D. C. in 1885.

The Bentley home, a stately mansion at 13th and McAlmont Streets, was the site occupied by the Arkansas Medical School from 1936 until its move to its new facilities in West Little Rock in 1957. Dr. Bentley founded what was probably the first free clinic in Little Rock and his clinic was located in the rear of Fones Brothers Hardware, which was near the College of Medicine. Edwin Bentley died in February 1917 at age 92 and is buried at Arlington National Cemetery. Dr. Edwin Bentley's son—Charles E. Bentley—was a well-known surgeon in the Little Rock area. It is interesting that the first welcoming address on behalf of the Faculty of Medicine was given by a surgeon (Edwin Bentley), but only six students were present for these formal ceremonies on October 7, 1879.

The second Head of the Department of Surgery of the University of Arkansas was Dr. Joseph P. Runyan (1869-1931). Dr. Runyan was Dean and President of the old College of Physicians and Surgeons in Little Rock which competed with the older Arkansas College of Medicine from its organization in 1906 until it merged with the Medical Department of the University of Arkansas in 1912. Dr. Runyan had a busy surgical practice in Little Rock, but he still found time to contribute to the medical school and to the medical litera-

*University of Arkansas for Medical Sciences, Little Rock, Arkansas.



ture. He published a paper on pathology of the gallbladder and the bile tract in the Journal of the American Medical Association in 1910. His accomplishments were recognized by election to membership in the Southern Surgical and Gynecological Association (now called the Southern Surgical Association) in 1901.

A surgery exam for the 1906 students had these questions: 1) Describe fully the symptoms of acute suppurative appendicitis and give the treatment. 2) Describe gastroenterostomy and name the indications for the operation. 3) Describe a Colles' fracture and give the treatment. 4) Define cholecystitis and describe the surgical treatment. 5) Describe the operation of trephining and give some of the indications for the operation. 6) Give general rules governing the treatment of gunshot wound of the abdomen. 7) What are hemorrhoids? Give their cause, classification, diagnosis and surgical treatment. 8) In a case of anuria, how would you determine whether due to suppression or retention? Name the causes of retention of urine and give their treatment.

Another surgeon founder of the medical school in 1879 was James A. Dibrell, Jr. This native Arkansan was born in rural Crawford County near Van Buren where his father had been a well known pioneer physician who had graduated from the University of Pennsylvania. Dr. Dibrell, Jr. was President of the Arkansas State Medical Society and in 1902 was Vice-President of the American Medical Association. He was admitted to the Southern Surgical Association the same year as Dr. Runyan, i.e. 1901. Dr. Dibrell was Dean of the medical school from 1886 (succeeding Dr. Hooper) until his death in 1904. At this point, it should be noted that two of the first three Deans of the College of Medicine at the University of Arkansas were surgeons.

The third Chairman of the Department of Surgery was Anderson Watkins (1876-1943). Dr. Watkins was born in Little Rock, took his premedical work at the University of Tennessee and graduated from the University of Arkansas Medical Department in 1897. His father, Walton Watkins, was a Captain in the Confederate Army and was wounded and taken prisoner in Missouri. After completing medical school, Dr. Anderson Watkins was Assistant Demonstrator in Anatomy and continued on the medical faculty through his years as Chairman of the Department of Surgery from 1919-1926. Anderson Watkins was named physician in charge of the newly opened Logan H. Roots Memorial Hospital in 1898. Dr. Watkins had a busy surgical practice and was one of the first physicians in Arkansas to employ radium. He was a member of the Watkins, Shipp, Bond and Rhinehart group. During his tenure as Head of Surgery, Dr. Watkins contributed two articles to the Journal of the Arkansas Medical Society, one dealing with bone surgery and the other dealing with cholecystitis.

The next occupant of the Chair of Surgery was

Dr. Carl S. Williamson (1896-1952), who earned and enjoyed both national and international acclaim. Dr. Williamson was a native Missourian who received his A.B. degree from the University of Missouri in 1918 and his M.D. degree from the University of Pennsylvania in 1920. He was at the Mayo Foundation and Clinic from 1920 until he came to Arkansas in 1926. Dr. Williamson received his Masters Degree in Surgery from the University of Minnesota in 1926. His work at Mayo with Dr. Frank Mann on experimental production of peptic ulcer endures in surgical history as the Mann-Williamson ulcer. Even more basic was Williamson's work on kidney transplantation. In Francis D. Moore's book on the development of tissue transplantation, entitled *Give and Take*, he credits Williamson as the first to understand clearly the rejection of the kidney. It was Williamson who reported that a kidney transplanted from one animal to another showed an entirely different reaction than one moved from one place to another in the same animal. Dr. Williamson's handwritten description of these classic studies on rejection of an allografted kidney were sent to Dr. Williamson's associate in Albuquerque, New Mexico—Dr. Lawrence H. Wilkinson. These were sent to Dr. Wilkinson by Dr. J. L. Bollman of the Mayo Clinic. Dr. Wilkinson sent these original handwritten recordings by Dr. Williamson on to me and I in turn sent them to Francis D. Moore (Moseley Professor of Surgery, Harvard, 1948-1976), a surgical scientist, scholar and historian at Harvard. In a recent letter to me, Dr. Moore wrote that these notes by Dr. Williamson "are the real incunabula of transplantation".

After leaving Arkansas, Dr. Williamson became Founder, Director and Chief of Surgery of the Green Bay Clinic in Wisconsin. In 1941 he entered active duty with the United States Army Air Force and in 1945 went to New Mexico to retire because of ill health. It was inevitable that he again found himself in the role of teacher and counselor, serving as Chief of Surgery at the Veterans Administration Hospital and Surgical Consultant of the Atchison, Topeka, and Santa Fe Hospitals, both in Albuquerque, New Mexico. Dr. Williamson was truly a giant in surgery.

James I. Scarborough (1880-1957) followed Dr. Williamson as Chairman of the Department of Surgery at Arkansas' Medical School. Dr. Scarborough had received his undergraduate degree from Princeton in 1901 and his M.D. degree from Johns Hopkins in 1908. He had extensive surgical training at Union Memorial Hospital in Baltimore from 1908-1912 and at the Mayo Clinic from 1912-1914. Dr. Scarborough worked with Dr. J. M. T. Finney of the John Hopkins faculty at Union Memorial in Baltimore. Scarborough was a very reserved, aloof, meticulous, slow surgeon which was in marked contrast to many of the busier surgeons in Little Rock at that time. Dr. Scarborough came to Little Rock in 1915 and five years later was one of the founders of Trinity Hospital. The Trinity group consisted of excellent physicians and surgeons who in the depression changed from a traditional fee for service institution to a pre-paid medical and hospital service plan. Members of the Trinity Hospital group were expelled from the Pulaski County Medical Society and the Arkansas State Medical Association. Dr. Scarborough had been elected to membership in the Southern Surgical Association in 1923 but following expulsion from the Pulaski County Medical Society, he and his associate, Dr. Mahlon Ogden, were dropped from the roster of Active Fellows in the Southern Surgical Association at its 1933 meeting. Dr. Henry Hollenberg was a surgical resident at the Cincinnati General Hospital under Dr. Mont Reid and was in attendance at this meeting of the Southern Surgical Association in 1933 as a guest of Dr. Reid. Dr. Hollenberg stated to me how much he was hurt when two fellow Arkansans (Dr. James Scarborough and Dr. Mahlon D. Ogden) were dropped from membership in the Southern Surgical Association. Justice and forgiveness prevailed. Dr. Hollenberg was President of the Pulaski County Medical Society when Drs. Scarborough and Ogden were re-admitted to membership in the Pulaski County Medical Society.

Dean Frank Vinsonhaler terminated Dr. Scarborough's appointment as Head of the Department of Surgery in the fall of 1932 and Dr. George V. Lewis became Head. George V. Lewis (1896-1955) was born in Lafayette County, Missouri and received a B.A. degree from the University of Missouri in 1917 and his M.D. from Washington University in 1919. After interning at the U. S. Public Health Service Hospital in Chicago, Dr. Lewis spent two years at Kings County Hospital in Brooklyn. Dr. Lewis' outstanding talent was teaching. His authoritarian, schoolmaster approach to surgery commanded the attention of

his students. Dr. Lewis was short of stature, but tall on his knowledge of the surgical literature. When asked if a surgeon had to be strong physically, Dr. Lewis responded, "a surgeon has to be strong enough to lift a knife".

Dr. Lewis' philosophy of teaching was to scare the students to death. Some feel that Dr. Lewis' teaching techniques were modeled after Dr. Barney Brooks of Vanderbilt. Dr. Lewis' lectures were so well prepared that one student recorded them in shorthand and had all of the lectures mimeographed for handouts to fellow students. A 1931 graduate of the College of Medicine, Dr. Edgar J. Easley, used Lewis' lecture notes during his career in the U. S. Navy and Easley's fellow officers were most complimentary of Lewis' lecture notes. As was true with his predecessors, Dr. Lewis was part-time at the medical school and was engaged in private practice in Little Rock. He was in charge of surgery at the Missouri Pacific Railroad Hospital and his associate for many years was Dr. Carl Rosenbaum.

Dr. Carl Rosenbaum (Washington University, M.D. 1927) served on the Voluntary Faculty of the medical school for many years. It was he who initiated the first Cancer Clinic at the medical school. The Tumor Clinic established by Dr. Rosenbaum was a free clinic and people from all over the state of Arkansas could be admitted and examined without charge. Under his stimulus similar clinics were developed at Pine Bluff, Fort Smith, Jonesboro and Texarkana. Dr. Rosenbaum was also successful in establishing the Arkansas Cancer Commission by receiving a grant from the Arkansas legislature for $30,000. Dr. Rosenbaum taught surgery at the medical school for many years and his chief interest was vascular surgery. His expertise in the treatment of complications of varicose veins was learned from Dr. Robert R. Linton of the Massachusetts General Hospital in Boston.

During the first sixty years of its existence, there was no full-time Chief of the Department of Surgery. In fact, there were virtually no full-time Clinical Department Heads as all clinical teaching was carried out by practicing physicians. The school's first full-time Pre-Clinical Instructor (John H. Baehr—a Philadelphia educated physician) was hired in September 1909 as "Demonstrator in Pathology, Bacteriology, and Chemistry".

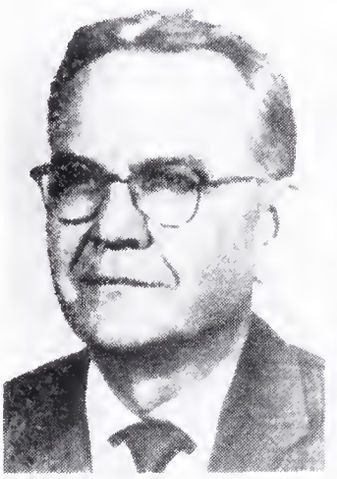
The University of Arkansas School of Medicine had many struggles during the first half of the twentieth century. Many physicians in Arkansas looked upon its medical school as inferior in quality and went out of state to attend more established and prestigious medical schools. Enrollment in Arkansas' College of Medicine fell to a low of fifteen during 1919-1920; and in the fall of 1919, the school discontinued clinical teaching. For three years it operated as a two-year medical school, but in 1922, again, instituted clinical instruction. The Basic Science Faculty were a dedicated lot even though they were overworked and underpaid. There was a great deal of jealousy between those members of the medical profession who were on the Clinical Staff at the College of Medicine and those who were not. All of the teaching was done by part-time surgeons, most of whom contributed their time. Dr. Francis W. "Bull" Carruthers was a most loyal faculty member in Orthopedic Surgery for years. This legendary individual earned a place of prominence in the development of orthopedics at our medical school. Some who gave significant portions of their time were reimbursed at a modest level up to $1800 per annum. The busiest surgeons in the Little Rock hospitals included the legendary Dr. Dewell Gann, Dr. W. F. Smith, Dr. Anderson Watkins, Dr. Joseph P. Runyan, Dr. Paul Hoover, Dr. Herman Hundling, Dr. Harvey Shipp, and Dr. Robert Eubanks. There were some very fast surgeons who kept one eye on the clock and the other on the patient. Reportedly, Drs. W. F. Smith and Carl Rosenbaum performed an appendectomy at the Missouri Pacific Hospital which was clocked at three minutes skin-to-skin.

The 1930's were troublesome years for the medical school. The only full-time faculty members were in the pre-clinical departments and most of these professors were non-Arkansans. Among the talented, supportive and dedicated non-Arkansan pre-clinical faculty were W. C. Langston, University of Iowa in Anatomy; Byron L. Robinson, University of Minnesota in Anatomy; C. H. McDonald, Johns Hopkins University in Physiology; Joel Whalin, University of Kansas in Bacteriology; and Paul L. Day, Columbia University in Biochemistry. The American Medical Association's Council on Medical Education reviewed the school's rating in 1936 and recommended that the College of Medicine be placed on confidential probation until June 1939. The accreditation group pointed out serious deficiencies in clinical teaching with glaringly few avail-

able teaching beds. In order to offset this, the School of Medicine signed a new agreement with the City of Little Rock in 1939 to lease City Hospital and to give the medical school control of its own teaching hospital in order to meet one of the AMA requirements. The gentle, courtly, mild and well-groomed Dean Frank Vinsonhaler resigned in 1939 at the age of 75. His successor was a political appointment—Stewart P. Cromer, who held the Ph.D. and M.D. degrees from Northwestern University. It was quite relevant that in 1939 Cromer was on the staff of the Council on Medical Education of the American Medical Association. Many felt that the new Dean Cromer under the watchful eye and support of the AMA would be able to straighten out the medical school in Arkansas.

Cromer appointed Edgar J. Poth (1899-) as the first full-time Professor and Chairman of the Department of Surgery at the University of Arkansas in 1939. Edgar Poth was born in 1899 in Seguin, Texas, received his undergraduate degree at the University of Texas and his M.D. degree from Johns Hopkins University in 1931. He completed his surgical training at Stanford University in 1936 under the renowned Dr. Emile Holman. Dr. Poth served as Chief of Surgery for major oil companies in the Persian Gulf prior to his appointment at the University of Arkansas. Arkansas' first full-time Chairman of Surgery was talented, austere, rigid, and stubborn. He had lofty academic standards and demanded much of himself and his associates. Poth had done his homework prior to coming to Little Rock and was acquainted with the background of many of its surgeons. After assuming his duties as Chairman of Surgery, Dr. Poth had private interviews with each member of the surgery staff and following these interviews, he discharged many of the local surgeons from his staff. It would have taken a diplomat to guide the Department of Surgery during its transition from part-time to full-time staff and Poth has never been known for diplomacy. The local surgical scene was not ready for such a rigid taskmaster and Poth did not have the warmth and wit to lessen the friction during this period of transition. Obviously, Dr. Poth caused Dean Cromer dyspepsia and insomnia and Dr. Poth felt that Cromer returned these discomforts.

In fairness to all parties concerned, a bit of historical perspective during the troubled 1930's may be helpful. In January 1931 the City of Little Rock, through action of the City Council, turned over to the University of Arkansas School of Medicine the facilities of the Little Rock General Hospital (Little Rock City Hospital) for teaching purposes. This gave the clinical faculty of the medical school exclusive authority over all charity patients at the hospital. Patients were admitted to the Little Rock City Hospital through either the Isaac Folsum Clinic or through the Emergency Room of the hospital. When the medical school took over City Hospital, Dr. George V. Lewis was



Poth



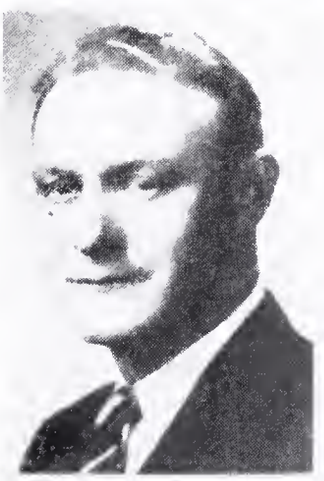
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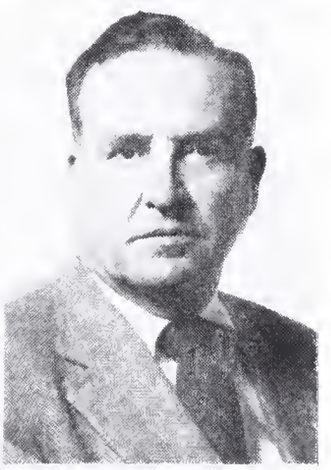
Smith



Dean



Growdon



Campbell

Acting Professor of Surgery and organized the surgical staff as follows: There were three surgical sections headed by Dr. George V. Lewis, Dr. Homer Higgins and Dr. H. W. Hundling. So-called junior surgeons assigned to these sections were Drs. Roy Moon, Randolph Tucker Smith, Paul Fulmer and Carl Rosenbaum. During Dr. James I. Scarborough's tenure as Professor and Head of the Department of Surgery, he gave only an occasional lecture and did practically no active work at the hospital. He performed more in the capacity of a consultant and much of the organization and teaching in the Department of Surgery were carried on by his successor, Dr. George V. Lewis. Dr. Daniel R. Hardeman joined the junior surgical staff in 1934. In 1936 Dr. J. K. Donaldson was added to the surgery staff and a fourth section was created for him. Students assigned to the surgical department were taken to the operating rooms and the instructor would talk while he operated. The AMA had insisted that more ward rounds with bedside teaching and less operating before students be the method of instruction, so this was instituted. In 1938, Dr. Henry Hollenberg returned to Little Rock and was made a member of the surgical staff at the medical school. As mentioned above, Dr. Poth trimmed the size of the surgical staff and instituted an "on-service" one-month assignment for a select few surgeons rather than the year round assignment of a large number of surgeons. Dr. Edgar Poth was aware of Dr. Henry Hollenberg's excellent training in surgery under Dr. Mont Reid at the University of Cincinnati and paid Dr. Hollenberg $150 per month for his services to the Department of Surgery at the Little Rock City Hospital. Dean Cromer acted as a peacemaker between Dr. Poth and the practicing surgeons in Little Rock who were opposed to the way Dr. Poth had reorganized the Department of Surgery. Poth remained adamant and said more full-time people would be needed in surgery if the school were to establish a proper residency training program in surgery. At odds with both Dean Cromer and the Little Rock surgeons, Poth resigned in May 1940. The resignation of Dr. Edgar Poth as the first full-time Head of Surgery and Dr. Raymond Gregory as the first full-time Head of the Department of Medicine were not quiet resignations. They took out an ad in the two Little Rock daily newspapers and "charged that lack of support for their policies by local members of the profession and administration prompted their resignations". The following day (May 7, 1940) Poth stated to the press, "I came here in good faith to help establish a first-class medical school and have directed my full energies to that end. Since I feel that I am no longer making headway, the only thing to do is to withdraw."

Dr. Poth left Arkansas and returned to Johns Hopkins as an Instructor in Surgery and remained there for two years prior to accepting a full-time position in the Department of Surgery at the University of Texas in Galveston. During his many years as Professor of Surgery at Galveston, Dr. Poth contributed to the surgical literature on various aspects of intestinal obstruction, intestinal sepsis, and peptic ulcer disease. His work on the bacterial flora of the bowel and antimicrobial bowel preparation was widely acclaimed.

In June of 1941, Dean Cromer was fired and Byron Robinson, who had served as Professor of Anatomy since 1925, was selected Dean of the medical school. Dr. Peter O. Thomas, who succeeded Dr. George V. Lewis as Chief of Surgery at Missouri Pacific Hospital, graduated from medical school in 1942 and his class had three different Deans during their medical school days, i.e.; Vinsonhaler, Cromer and Robinson.

Dr. Homer A. Higgins (1885-1961), a 1912 graduate of the Arkansas College of Medicine was named Chairman of Surgery after Dr. Poth. Dr. Higgins' appointment was basically an interim and diplomatic appointment. He had been engaged in the practice of surgery for many years in Little Rock and had been affiliated with Dr. Joseph P. Runyan for awhile. He was a mild mannered surgeon who could get along with everyone. He had not received the surgical training of many of his predecessors, but his overall demeanor calmed the turbulent waters in the surgical community.

Dr. Randolph Tucker Smith (1898-1956) became Chairman of the Department of Surgery in 1941. A native of Camden, Arkansas, Randolph Smith received an A.B. degree from Washington and Lee University in 1920 and taught French at Augusta Military Academy near Staunton, Virginia the following year. He returned to Hopkins for some premedical courses, entered medical school and was granted the M.D. from Johns Hopkins in 1926. Dr. Smith served as an Assistant Resident in Pathology at the Baltimore City Hospital for six months following graduation from

medical school and then received two years of surgical training under the renowned Dr. John B. Deaver at Lankenau Hospital in Philadelphia, Pennsylvania.

Dr. Smith had been on the surgery staff at the medical school for twelve years prior to assuming the Chairmanship in 1941. During his time at the medical school, Dr. Smith inaugurated a course in operative surgery in the dog lab. This course was modeled after a similar course that he had taken while a medical student at Johns Hopkins. Dr. Smith was somewhat pompous with an authoritarian viewpoint and had a rather modest private practice. He was an avid train buff and the third floor of his home was occupied by a large layout of model trains. Other hobbies included attending western movies and collecting rare coins. The surgery dog lab during Dr. Smith's tenure was located close to the old Marion Hotel and reliable sources say that it was a bit risky to walk your dog too close to the dog surgery area lest he change from a canine promenader to a canine patient. Dr. Smith was very active in the Nurismatic Group in Arkansas and was visiting a friend from Johns Hopkins (Fred Krock, M.D., Hopkins 1925) who shared his interest in rare coins. Dr. Smith died during this visit to Fort Smith on March 22, 1956. During his tenure as Chairman, Dr. Smith was not much of a contributor to the surgical literature, but he was a faithful, dedicated didatic teacher.

From 1943-1947 Dr. George V. Lewis again served as Chairman of the Department of Surgery. Undoubtedly, all students who took Dr. Lewis' surgery course will remember him with fear and/or fondness. He was a hard taskmaster and drilled the principles of surgery into his students. Dr. Lewis remained as Chief of Surgery at the Missouri Pacific Hospital and Dr. Carl Rosenbaum continued his association with Dr. Lewis. Dr. Smith developed a cervical disc and was operated upon by Dr. Robert Watson. Rumor has it that prior to the operative procedure, Dr. Watson looked down upon his former surgical Chairman and stated how many Arkansas students would like to be in his shoes and have a knife against the professor's throat. Dr. Lewis became progressively less active in the Department of Surgery as his health worsened.

In 1944 Dr. William G. Cooper came to Little Rock having completed his surgical training at Barnes Hospital in St. Louis. Dr. Cooper had received his M.D. at Yale in 1937 prior to going to St. Louis for his residency in surgery. For his full-time services to the Surgery Department, Dr. Cooper received $6,000 per year. During the closing years of World War II, the surgical service was overworked and understaffed; and during these trying times, many have stated "the real Professor of Surgery at the medical school was Dr. Willie Cooper".

A colorful and controversial surgeon at the medical school from 1936-1954 was Dr. J. K. Donaldson. Born in Green Forest, Arkansas, Donaldson received his B.S. degree from the University of Arkansas in 1925 and his M.D. from Tulane in 1928. After an internship at the San Francisco General Hospital, he took surgical training at the Clifton Spring Sanatorium and Clinic in New York State and then worked six months in Newell Sanatorium in Chattanooga, Tennessee. He spent the next few years in San Antonio at the Robert Green City and County Hospital and came to Little Rock in 1936. He was a prolific writer and wrote a book entitled, *Surgical Disorders of the Chest*, which was published by Lea and Febiger. The temerarious accounts of some of these early thoracic surgical procedures are best left untold. Eugene B. Sive (B.S., M.D., University of Cincinnati) was a young surgery resident who worked with Dr. Donaldson on mesenteric venous occlusion in the research laboratory and Sive was awarded the Master of Surgery Degree from Arkansas in June 1941.

Graduates of Washington University College of Medicine and/or the Barnes Hospital surgical residency programs continued to have a very strong influence in the Department of Surgery. The first person to complete his surgical training in the Department of Surgery at the University of Arkansas was Dr. James H. Growdon, a fourth generation physician and a native of Joplin, Missouri. Dr. Growdon (M.D., Washington University, 1940) served his internship at Barnes Hospital in St. Louis 1940-1941. He then began a very competitive and excellent surgical residency program at Barnes under the late Dr. Evarts Graham. In 1944 Dr. Growdon was called to the service and served with distinction in the Pacific Theater until April 1946. He was offered a position as a chest fellow with Dr. Graham but the surgical program at Barnes was flooded with returnees from the service. Housing in St. Louis was particularly tight and some residents were living in

attic rooms and other close quarters. Dr. William Cooper invited Dr. Growdon to look at the program in Little Rock and this he did in the late spring of 1946. Dr. Growdon was promised a place to live and an income of $150 per month. These were not the best of times from the standpoint of administrative stability at the College of Medicine as the Trustees voted to ask for Dean Robinson's resignation in September 1946. Dr. Clay Chenault was then appointed Vice-President of the University of Arkansas in charge of the medical school and the University Hospital. Dr. Lewis was in failing health and the bulk of the work was carried on by other surgeons mentioned earlier in this narrative. Dr. Chenault was an experienced and accomplished administrator who organized and directed what had been a somewhat loose and amorphous regime.

Chenault handpicked Gilbert O. Dean (1910-), who received his M.D. at the University of Arkansas in 1936, as the first full-time Chairman of the Department of Surgery since Dr. Poth's brief tenure. While a medical student, Dr. Dean taught in the Department of Anatomy and was encouraged to go to the University of Iowa for his surgical training by two Anatomy professors who had taught in Iowa earlier (Langston and Robertson). After five years of residency training in surgery at the University of Iowa, Dr. Dean returned to Little Rock but shortly thereafter left to serve in the South Pacific as a Navy doctor assigned to a Marine Air Wing. Dr. Dean touched down on 27 different islands before arriving at the mainland of China. Dr. Dean not only had the support of Dr. Chenault but he was befriended by the President of the University (Lewis Webster Jones) and Dr. Euclid Smith, a member of the University Board of Trustees and a potent figure in organized medicine in Arkansas. Dr. Dean received a salary of $15,000 per year as Chairman of Surgery and this raised some eyebrows as the salary for the President of the University of Arkansas was $10,000 per year.

Dr. Gene Starkloff was Chief Resident in Surgery in Dr. Dean's first year as Chairman. Dr. Starkloff had received his M.D. from Washington University and was a close friend of Drs. Cooper and Growdon. Prior to coming to Little Rock, Dr. Starkloff was a Resident in Surgery at the Roosevelt Hospital in New York City where he was unable to find proper housing for his wife and daughter. Again, the open spaces of Arkansas appealed to the Starkloffs and they came to Little Rock where Starkloff was befriended by Drs. Hollenberg, Charles Henry and others. After leaving Little Rock, Dr. Starkloff returned to St. Louis and served on the surgery faculty of St. Louis University for many years. He had been impressed with the quality of the medical students at Arkansas and selected Dr. Jean Gladden and Dr. Martin Eisele for the residency program at the St. Louis City Hospital.

Howard Schwander (M.D., Washington University, 1938) was the first individual to receive *all* his surgical training in the Department of Surgery at Arkansas. Dr. Schwander had formal training in Pathology and taught pathology in Dr. Lloyd Wilburs' department during the mid 1940's. Dr. Schwander is board certified both in Pathology and Surgery.

Dr. James P. Jernigan was Dr. Dean's first appointment in the surgery residency program at Arkansas. Dr. Dean has stated that one of his fondest memories while serving as Chairman was to learn that his first resident, Jim Jernigan, had passed the American Board of Surgery Examination.

Dr. Growdon remained on the full-time staff after completing his residency. At that time, oncology services were set up at many medical schools throughout the United States and Dr. Growdon was named Head of the Department of Oncology at Arkansas. In 1949, Gilbert Dean added two more surgeons to his full-time staff. Dr. Masauki Hara (A.B. 1938, M.D. 1942, Stanford) had received his surgical residency training at St. Louis. Dr. Peter O. Thomas had known Dr. Hara at St. Louis and recommended Dr. Hara to Dr. Dean. Walter F. Becker (B.A., TCU, 1939, M.D., Vanderbilt, 1943) was recruited to Arkansas the same year. He came to the University of Arkansas as Instructor in Surgery after completing his residency at the Lahey Clinic and the University of Virginia. In September 1950, Dr. Becker joined Dr. Howard Mahorner in the practice of surgery in New Orleans and remained in the Crescent City until his death in 1981. Dr. Becker was a very distinguished New Orleans surgeon and was Clinical Professor of Surgery at LSU, an Examiner for the American Board of Surgery, and a member of many prestigious surgical associations. He served as President of the Southern Surgical Association in 1976. Dr. Becker was a tall man who was formal and meticulous both in

speech and demeanor. He told the author, "Gilbert, you wouldn't believe the conditions I found in Arkansas—the students were barbaric both in their mode of speech and dress".

During the four years that Gilbert Dean was Chairman of the department, the medical school had four different Deans — Benjamin B. Wells, Joseph T. Roberts, William C. Langston, and Hayden Nicholson. Limited physical resources and marginal fiscal support proved frustrating to Gilbert Dean. When Dean Hayden Nicholson proposed that Dr. Gilbert Dean's salary be cut, Gib Dean resigned as of that date and James Growdon was appointed Head of the Surgery Department. Gilbert Dean and Warren Murry (Arkansas, M.D., 1947, top of his class) authored a paper on volvulus of the sigmoid colon which was presented to the Southern Surgical Association in December 1951.

Dr. James H. Growdon (1916-), an excellent surgeon and clinician, won the admiration and respect of all residents who worked with him during his fourteen years as Chairman of the department. His areas of major concern were the teaching and performance of clinical surgery. His knowledge of surgery was broad and deep. He was recognized as an expert in esophageal hiatal hernia and published many papers on this topic during his tenure as Chairman of Surgery. Dr. Growdon was quite aware of the role of basic surgical research in an academic department of surgery and was most supportive of Dr. Hara's work in the experimental laboratory. Jerome J. Landy (University of Illinois, M.D., 1950; University of Chicago, Ph.D. in Pharmacology, 1957) joined the staff of the Department of Surgery in July 1957. Dr. Landy received a $220,000 grant from the National Institutes of Health and set up a germ-free laboratory at the Barton Research Institute. Dr. Landy left Arkansas in 1961 for Variety Children's Research Foundation in Miami, Florida. Parsimonious financial support and marginal facilities for private patients made it difficult to recruit and retain full-time faculty in surgery. Acquisition of research grants and publication of investigative studies took precedence over the attraction and care of private patients. How things changed! In the early 1980's, 99% of the entire budget for the Department of Surgery had to be generated through care of private patients. Frustration and disappointment persisted despite herculean efforts on the part of Dr. Growdon; so he resigned as Head of the department in 1964.

Thomas Jefferson wrote, "I like the dreams of the future better than the history of the past".

I was not familiar with the history of the College of Medicine and its Department of Surgery when I visited Little Rock in 1965. However, I was very favorably impressed by many of its medical faculty members, particularly Dean Winston K. Shorey. Dr. Shorey possessed six essential qualities that Dr. William Menninger states are the key to success: sincerity, personal integrity, humility, courtesy, wisdom, and charity. This venerable gentleman from Vermont was a super salesman for his adopted state of Arkansas. People loved Win Shorey because Win Shorey loved people. Win Shorey was not vindictive, petty, indirect, shifty, insecure or underhanded. Dean Shorey could disagree with someone without being disagreeable. He made substantive changes in an evolutionary not revolutionary way. He won the respect and love of the medical profession throughout Arkansas. He served as President of the Pulaski County Medical Society, Vice-President of the Arkansas State Medical Society and he founded the Area Health Education Centers and the Arkansas Caduceus Club (alumni of the College of Medicine). This physician was the Head of our medical center family and Arkansas is fortunate to have had him. His name will endure at the University of Arkansas Medical Sciences Campus as the Education Wing, which houses the pre-clinical and clinical faculty, is now the Winston K. Shorey Building. When Dean Shorey asked my wife and me to join the medical center family in 1965, we were delighted to do so.

Gilbert S. Campbell (1924-), who received his B.A. and M.D. from the University of Virginia and his M.S. and Ph.D. from the University of Minnesota, believed then and still does that Arkansas is the Land of Opportunity.

When I came to Little Rock in the summer of 1965, approved postgraduate training programs in neurosurgery, otolaryngology, and thoracic surgery were nonexistent. The Division of Ophthalmology and the Division of Urology were without full-time leadership because of the departure of Dr. Sam Jones and Dr. Esmond Braun respectively. Only Anesthesiology (Dr. Ferdinand Greifenstein) and Orthopedics (Dr. Benjamin Drompp) had a full-time Chairman in the summer of 1965. I was told by Dr. Lyndon Lee (Chief of Surgery of the

Veterans Administration headquartered in Washington, D. C.) that the surgical services of the Veterans Administration Hospitals both in Little Rock and in North Little Rock needed major overhauling. There was a loose affiliation in general surgery regarding rotation of the occasional VA surgery resident to the University Hospital, but in essence they were separate residency programs with one being based at the VA and the other based at the University Hospital. It should also be noted that there was a separate surgery service at the North Little Rock Veterans Hospital. Within a year, the two separate Veterans Administration Hospital surgical services were combined as one service at the Roosevelt Road VA Hospital. We were able to recruit Dr. Raymond C. Read as Professor of Surgery and Chief of the Surgical Service at the Little Rock VA Hospital. Within a rather short period of time, the residency programs in surgery and surgical specialties were completely integrated with the Roosevelt Road VA Hospital.

My Professor and Chief (Owen H. Wangensteen) taught that one of the greatest opportunities in academic life is the power of appointment. Dean Shorey gave me this opportunity and we were able to recruit Dr. Stevenson Flanigan in Neurosurgery, Dr. Fritz Fraunfelder in Ophthalmology, Dr. Robert McGrew in Otolaryngology, and Dr. Jack Mobley in Urology. I guess I recruited myself to set up an approved postgraduate training program in thoracic and cardiovascular surgery. My predecessor, Dr. James Growdon, had recruited an excellent group of surgery residents; and the first two chief residents with whom I had the privilege to work were Drs. Thomas E. Bell and G. Doyne Williams. Dr. Hara, who had initiated kidney transplantation and open heart surgery prior to my arrival, continued to be a most productive, energetic and dedicated surgeon. At that very time, he was fighting a courageous battle against a malignancy that took his life a few years later. Dr. Hara was a surgical hero to many residents and students. After his death, a fund was created to support an annual Masauki Hara Lectureship in Surgery. The first two Hara Lectures were given by Dr. Denton Cooley (Texas Heart Institute) and Dr. Marvin Gleidman (Chairman of Surgery, Albert Einstein College of Medicine).

In the summer of 1967, Dr. Fred T. Caldwell joined the department as Professor of Surgery. A native of Arkansas, Dr. Caldwell (M.D., Washington University, 1950) was already a nationally recognized expert in the area of burns and surgical metabolism. Dr. Caldwell and the many residents who have worked with him have remained as productive investigators throughout his many years in the department.

Dr. G. Doyne Williams served for two years in the U. S. Army following completion of his surgical residency in the summer of 1966. He returned to Arkansas to take a two-year residency in thoracic surgery and shortly thereafter developed the busiest and most successful open-heart program in the state. Dr. Williams was a tireless worker and was most generous in his support of the department. After years of dedicated service, he resigned in January 1981 to enter the private practice of cardiovascular surgery. Subsequently, Stephen Van Devanter (M.D., George Washington University, 1971) and Richard Westerman (M.D., Case Western Reserve University, 1975) headed up the cardiac program at the Arkansas Children's Hospital, the University Hospital and the McClellan VA Hospital. Their particular expertise is in the correction of very complex congenital cardiac defects as they had trained and worked in this area with Dr. Aldo Castaneda, Cardiovascular Surgeon and Chief at the Boston Children's Hospital. The author is indebted to his friend Dr. Castaneda for his help in recruiting these two excellent cardiac surgeons.

In the summer of 1978, a full-time pediatric surgeon was recruited to the department, i.e. E. Stevers Golladay from Johns Hopkins (M.D., Tulane, 1967). Dr. Golladay has developed a busy pediatric surgical service at the Children's Hospital and the Surgery Department is working to broaden this activity. Currently, one of our former surgery residents, Dr. Samuel Smith, is in a very coveted fellowship in pediatric surgery at Pittsburgh and plans on returning to Arkansas.

After completing his surgical residency at Arkansas, Kent Westbrook (M.D., University of Arkansas, 1965) took postgraduate training in oncology at the M. D. Anderson Hospital. He returned to Arkansas and rose rather rapidly to the position of Professor of Surgery. Dr. Westbrook and his associates are now in the process of developing the Arkansas Cancer Research Foundation.

Raymond C. Read (M.D., Minnesota, 1946) and Bernard W. Thompson (M.D., Arkansas, 1949) have supervised the residents at the Veterans

Administration Hospital. They have been productive members of many surgical groups and Dr. Read served as President of the Southwestern Surgical Congress in 1984 and Dr. Thompson is the current President of the Southern Association for Vascular Surgery.

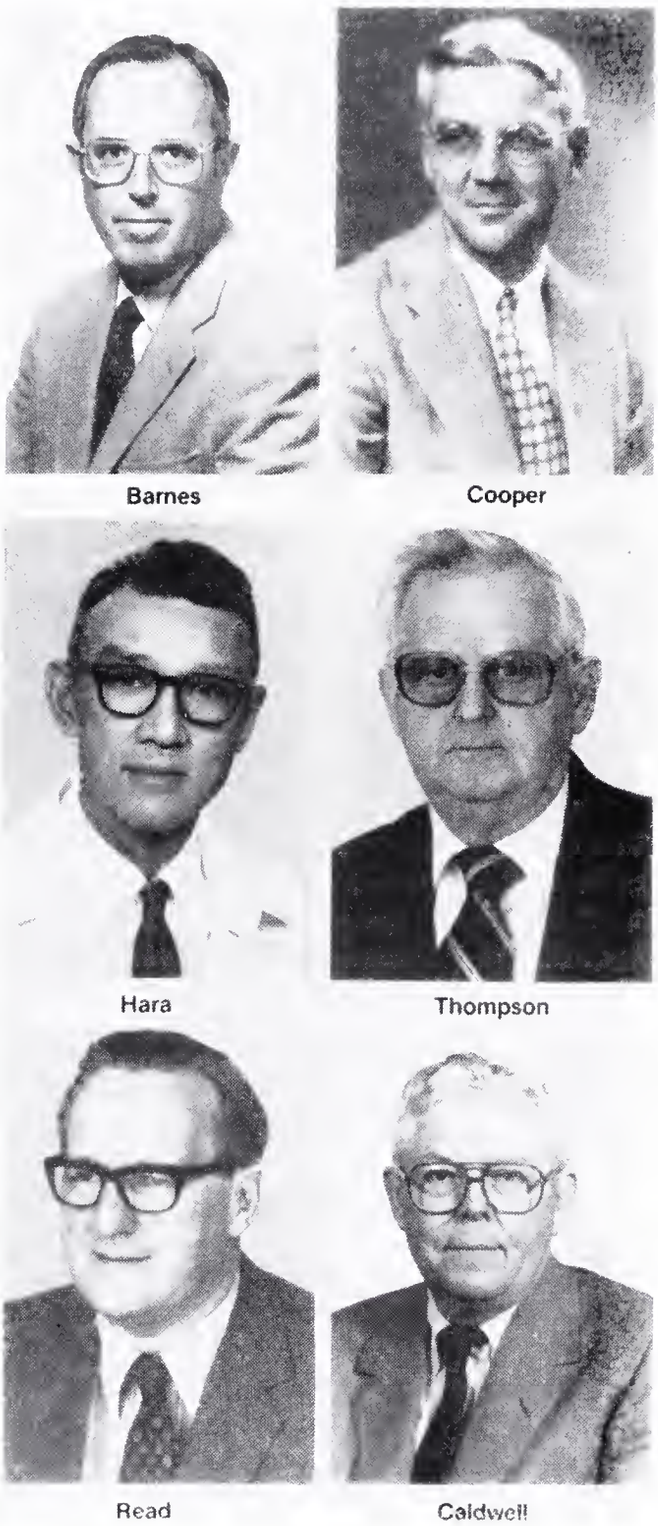
When I came here in 1965, the professional income of members of the Surgery Department was quite modest. There was a paucity of state funds to match entitlement programs under Medicare. In April 1966, Mr. Lloyd E. Rader, long time Director of Oklahoma Public Welfare Commission, made a presentation before our University Hospital Board for Professional Operations which was Chaired at that time by Dr. Richard Ebert. The author is a personal friend of Mr. Rader and the latter, along with Wilbur Cohen, were instrumental in the development of the Kerr-Mills Bill. Later Mr. Rader was very helpful in enlightening Dr. Roger Bost regarding federal funding for health care delivery, and Dr. Bost along with Senator Bumpers were most helpful to our College of Medicine.

As the income developed by the Department of Surgery soared, much of this money was plowed back into the school. Faculty salaries, equipment, research support, surgery residents travel, renovation, and contributions to other clinical and preclinical departments became routine. We became a part of a superbly funded study on the Surgical Control of Hyperlipidemia, a study based at the University of Minnesota under the direction of Drs. Henry Buchwald and Richard L. Varco. Drs. Robert T. Bulloch and Malcolm Pearce spearheaded Cardiology's participation in this study.

It is the author's opinion that Dean Shorey was the glue that held the medical center family together. Unselfish sharing was the order of the day. After his departure as Dean, internecine separatism and combativeness became commonplace.

The first Vietnamese physician to train at our medical center was Dr. Nghiem Dai, who served as a resident in surgery from 1975 to 1977. I had known Dr. Dai when I served as Visiting Professor at the University of Saigon in 1973.

Janet Hale (M.D., Arkansas, 1977) is the first female to complete a surgical residency at Arkansas. She was an excellent resident and was named Resident of the Year in the 1984 medical school yearbook. Dr. Hale took post residency training in a breast surgery fellowship in Dallas where she is now in private practice.



Other surgery residents to receive Resident of the Year Honors are: Drs. Charles Mabry (1976), John Ransom (1979), Robert Petrino (1980), Ralph Ligon (1981), and Sam Smith (1985).

Dr. Martin Eisele and his wife, Pat, have made local arrangements for the Department of Surgery and the Arkansas Chapter of the American College of Surgeons to sponsor a program in Hot Springs annually since 1966. Guest speakers are a veritable Who's Who in American Surgery—Drs. Owen H. Wangensteen, Harris B. Shumacker,

Lloyd D. MacLean, H. William Scott, W. Dean Warren, Richard L. Varco, James D. Hardy, William J. Fry, John S. Najarian, Seymour I. Schwartz, Edward R. Woodward, B. W. Haynes, Marvin L. Gliedman, Ward O. Griffen, John H. Davis, Robert Zeppa, and Lawrence W. Way. Other visiting professors include: Drs. Edward W. Humphrey, Francis D. Moore, Mark M. Ravitch, and Norman E. Shumway.

In the late 1960's, the department began to rotate its surgery residents through the private services of Baptist Hospital. Dr. William G. Cooper donated his time and talent in the supervision and coordination of this program. We enjoyed the full support of Drs. Howard Schwander, Grimsley Graham, Benjamin Lincoln, Hugh Burnett, Patrick Osam, Everett Tucker and others. This program has served as a professional bridge between the part-time and full-time staff and has added special enrichment to the education of the surgical residents.

The Department was honored and delighted to host the 1979 meeting of the renowned Halsted Society. I had served as its President one year earlier. Local papers were presented at our medical school on Thursday and the next two days of the scientific program were held at the Red Apple Inn. We enjoyed the largest attendance in the history of this group which first met at Johns Hopkins in 1924.

My tenure as Chairman was terminated on June 30, 1983. Robert W. Barnes (1936-), who received his B.A. in 1958 at the University of Colorado and his M.D. in 1961 at the University of Illinois, assumed the Chairmanship in the late summer of 1983. I shall give this quiet spoken, thoughtful surgeon my fullest support.

The greatest contribution the Department of Surgery has made from 1947 to the present is the education and training of surgery residents. From 1947 through December 31, 1985, 102 individuals completed their training in our Department of Surgery. All of us who have participated in their education are proud of the surgical services these former residents are delivering, most of whom are active surgeons in their home state of Arkansas.

The author thanks the following for their help with this historical review: William Cooper, Gilbert Dean, Edgar Easley, James Growdon, Henry Hollenberg, Horace Marvin, Carl Rosenbaum, Howard Schwander, Gene Starkloff, Peter Thomas, Bernard Thompson, Edwina Walls, and Lawrence Wilkinson.

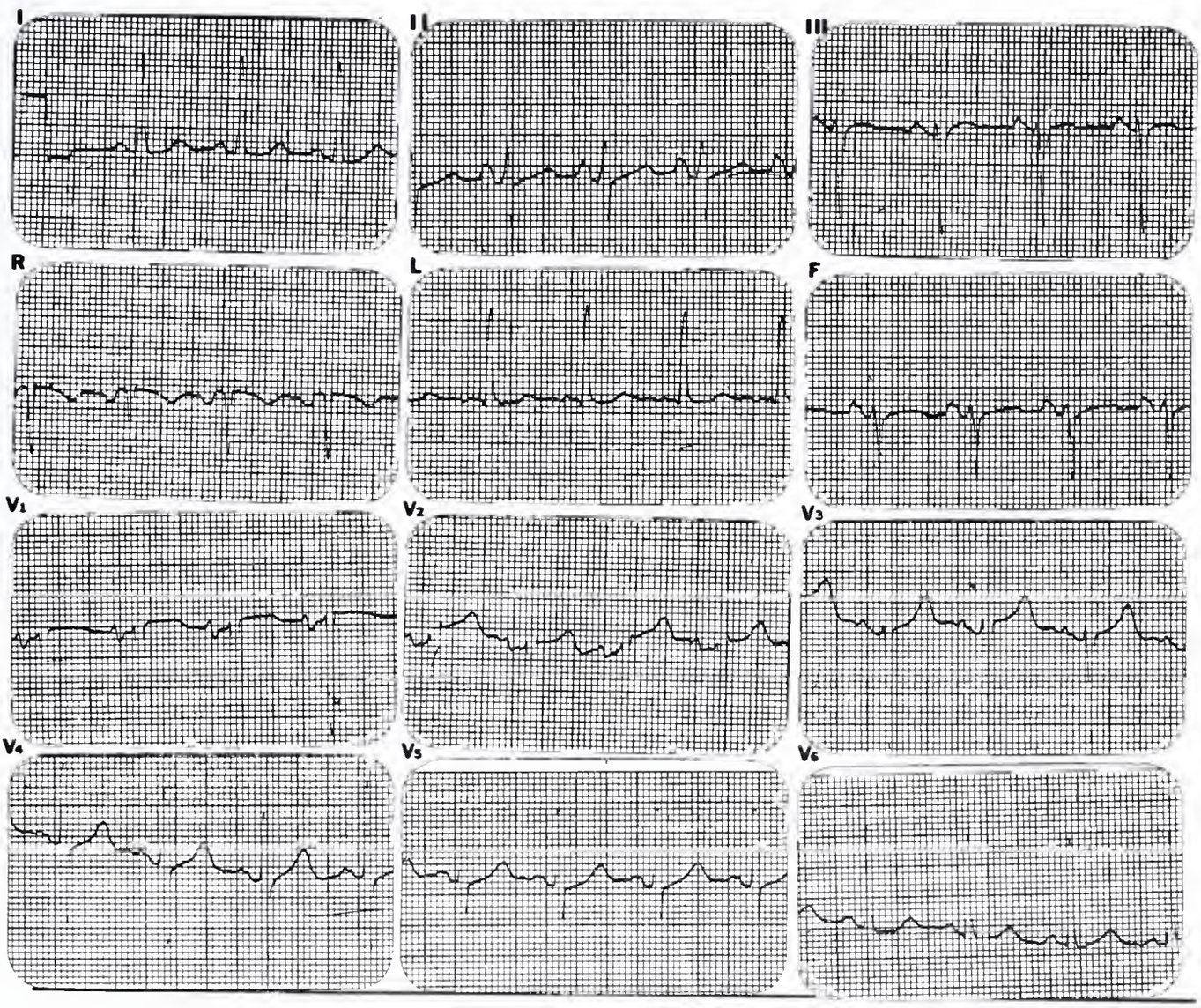
On behalf of the surgery residents and staff since 1965, a special thanks to two super secretaries—Miss Sandra Russell (Mrs. Virgle Lyons) and Miss Linda Lindsey.

ELECTROCARDIOGRAM OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine

(See **Answer on Page 593**)

HISTORY: A. W. is a 65-year-old black woman who presented because of shortness of breath and edema. She had a grade II/VI systolic ejection murmur at the base of her heart and a grade III/VI holosystolic murmur at her cardiac apex. The former murmur was transmitted to her carotids and the latter murmur radiated to her axilla. Her ECG is shown. What do you think about it?



Tom Beasley, M.D., and John W. Watson, M.D.
UAMS - LRVA Division of Cardiology
Little Rock, Arkansas



Office Orthopaedics

What's New in Feet?

I. Leighton Millard, M.D.*

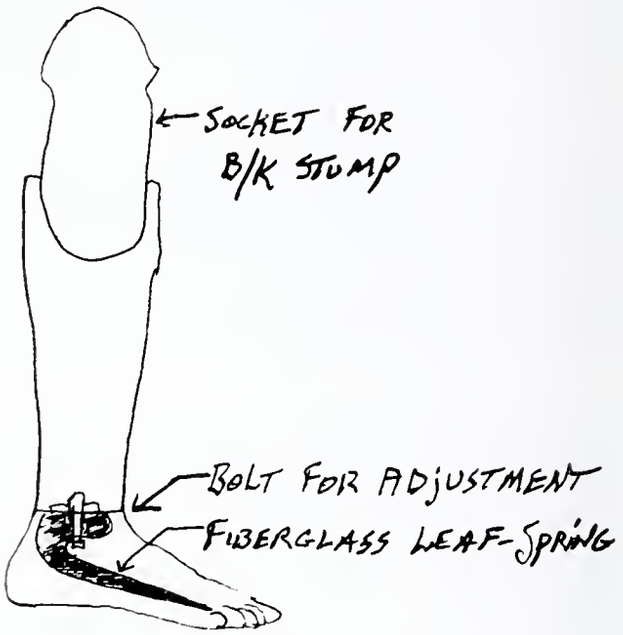
For many years there has been one big deficiency in the fabrication of lower extremity artificial limbs. This was because of the lack of any reliable dynamic foot piece. The contact of the foot to the ground, even with a good cushion heel, left the amputee with no way to dynamically advance the leg in walking except by swinging the leg from a joint (knee or hip). This often causes overstriding and makes the foot hit the ground with more force than is desirable.

Recently the desire of amputees to participate in athletics, and their clamor for more efficient lower limbs led a group of people** in Seattle, Washington to develop a dynamic foot prosthesis. They undertook an extensive three year research program to identify the kinetic needs of a running amputee.

This research, in brief, showed that a running amputee uses a straight knee on the prosthetic side and reduced hip and knee flexion on the intact limb side. It was also obvious that the available prosthetic feet did not allow dorsi and plantar flexion or pronation and supination of the prosthetic foot as it contacted the ground. These studies also showed that the "running" prosthesis foot should be set in 3 degrees plantar flexion (at the ankle).

It appeared that some of the faults of the artificial foot could be corrected by an energy storing ankle/foot device. The researchers used data from extensive kinesiology testing to design a leaf-spring device. The spring stores energy on foot contact and releases this force in pushing off from the ground to assist the leg in swinging forward.

Engineering analysis indicated that fiberglass was the best material for the leaf-spring mechanism. Therefore a series of fiberglass leaf-springs with a rubber bumper was constructed (see Figure 1). In use, this special foot has produced comments from prosthesis wearers, as follows:



1. Patient acceptance and agility in use was evident within one week.
2. Some difficulty in slow walking because of the springing forward action of the leg.
3. Ease of running with increased stride length and push off, *and* more efficient running by the intact limb.
4. Ramp and stair climbing much easier.
5. Increased athletic abilities especially in running with less discomfort and fatigue.

Research is continuing to try to improve overall function and to adapt the leaf-spring mechanism to slow walking.

*Little Rock Orthopedic Clinic, 9500 Lile Drive, P. O. Box 5270, Little Rock, Arkansas 72215.
**Ernest M. Burgess, M.D., Drew A. Hittenberger, C.P., Shirley M. Forsgren, and DeVere Lindh, M.S., M.E.

CONCLUSION

The Seattle prosthetic foot has been designed and constructed to dynamically store and release energy through controlled spring motion. It offers a good alternative to the prosthesis wearer who wants to be active in athletics. At this time the athlete might use two limbs, one for slow walking and one for running.

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ANSWER—Electrocardiogram of the Month

DISCUSSION: The mechonism is sinus. Left oxis deviotion is present. The QRS durotian is 0.09 seconds. The P waves ore 0.12 secands in durotian, are natched, and the praduct af the width (in secands) ond the depth (in millimeters) of the terminol portian af the P wave in V_1 exceeds 0.04 mm. sec.; features af left atrial enlargement. Even withaut voltage criteria, the presence af left oxis deviatian, the QRS duratian, and the P-terminol force cambine to imply left ventricular hypertraphy. The murmurs described suggest oortic stenosis and mitral regurgitatian, valvular lesians that set the stoge far the develapment af bath left otrial ond left ventriculor hypertraphy.

The editor wishes to thank Dr. Beosley af Canway, Arkansas far his contributions ta this manth's feature.

Radiology Perspective:

Human Percutaneous Laser Angioplasty

Timothy C. McCowan, M.D.,* Ernest J. Ferris, M.D.,* Max L. Baker, Ph.D.,* Kenneth V. Robbins, M.D.,* John E. Reifsteck, M.D.,* Homer L. Fleisher, M.D.,** and Robert W. Barnes, M.D.**

Atherosclerotic peripheral vascular disease is a major cause of morbidity and mortality in the adult population. Medical management fails in many cases, and surgical bypass of affected vessels has been the mainstay of treatment. In many instances interventional radiologic procedures have proven safe and effective. These procedures utilize a percutaneous approach to cannulate the vessel followed by balloon dilatation of selected lesions. Some lesions, notably high-grade stenoses and total occlusions, are poor candidates for this therapy. Recently, interest has focused on the use of laser energy for the treatment of this particular category of vascular lesions.[1-4] We would like to report the first successful percutaneous laser angioplasty performed in Arkansas.

REPORT OF CASE

The patient was an 79-year-old man who presented to the hospital with the complaint of left lower leg and foot pain at rest. He had a long history of claudication in this extremity and also had similar but less pronounced symptoms in his right leg. His past medical history was significant for hypertension. His blood pressure was controlled with triamterene 75 mg/hydrochlorothiazide 50 (Maxzide) q.i.d. and guanabenz acetate (Wytensin) 4 mg q.i.d. The patient also took dipyridamole (Persantin) 50 mg t.i.d. He denied myocardial infarction, cerebrovascular accident, diabetes mellitus, or known renal disease.

Doppler pressure study of his lower extremities revealed an ankle/arm index of 0.54 on the right and 0.27 on the left (Normal > 1.0). Angiography showed diffuse atherosclerotic disease in his distal aorta and common iliac arteries. A mild stenosis of his right external iliac artery and a high-grade stenosis of his left external iliac artery were noted. The distal left superficial femoral artery had a focal segment of atherosclerosis with a 99 percent stenosis. (Figure 1.) On the left, the patient had an intact peroneal artery and an anterior tibial artery that reconstituted above the ankle. An intact peroneal artery and a reconstituted posterior tibial artery were seen on the right in addition to a moderate stenosis of the right deep femoral artery.



Figure 1.
Distal superficial femoral artery. A segment of atherosclerotic disease is seen with an area of high-grade stenosis (arrow).

Three days following angiography, the patient underwent percutaneous balloon dilatation of his left external iliac artery stenosis. This was succuesful, and no post-dilatation pressure gradient across the lesion was present. The patient developed a moderate hematoma at the left groin puncture site.

Five days later the patient underwent laser angioplasty of the left distal superficial femoral

*Department of Radiology, University of Arkansas for Medical Sciences, Little Rock, Arkansas 72205.
**Department of Surgery, University of Arkansas for Medical Sciences, Little Rock, Arkansas 72205.
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artery stenosis. The common femoral artery was cannulated in an antegrade manner at the left groin. An 8 French long-stem bloodless sheath was placed in the femoral artery. A 200 micron quartz-based laser fiber with a 2 mm metal alloy tip was then advanced under fluoroscopic and angiographic control to a position just proximal to the stenosis. The lesion was lasered with 80 joules of energy (8 watts for 10 seconds) from a 14 watt argon laser (Trimedyne, Inc.) The tip easily passed through the stenotic lesion with gentle manual pressure. (Figure 2.) The patient reported

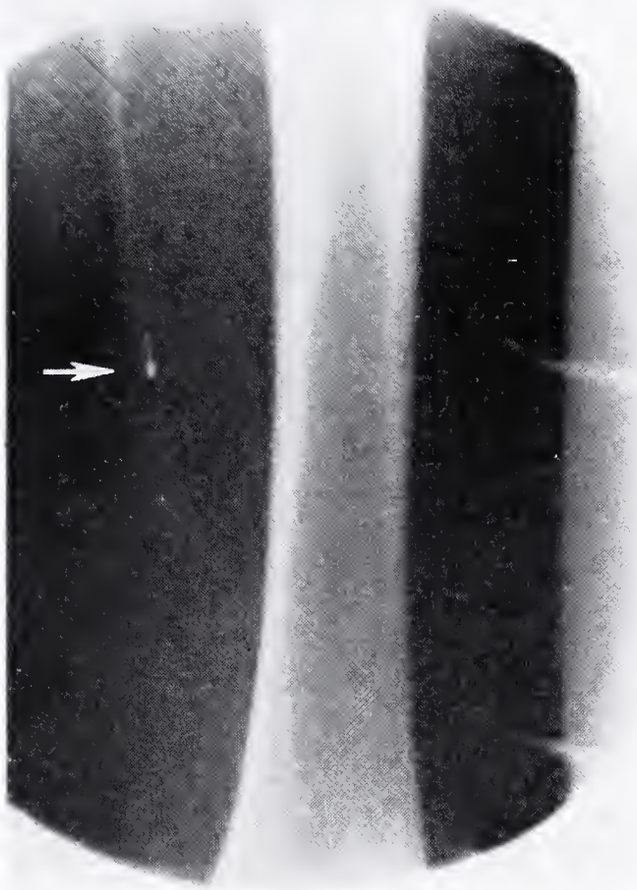


Figure 2.
During laser angioplasty. The metal-capped fiber (arrow) is easily visualized during fluoroscopy.

no pain or sensation during lasering. An angiogram was then performed through the sheath. This showed that a 1.2 mm channel had been created through the stenotic area. A 0.032 inch floppy guidewire was easily passed through the lesion. This was followed by a 5 mm diameter, 2 cm length balloon dilatation catheter. The stenotic segment was dilated in stages with 20-second inflations of the balloon. Post-dilatation digital angiography showed a widely patent vessel. (Figure 3.) The patient was given meperidine

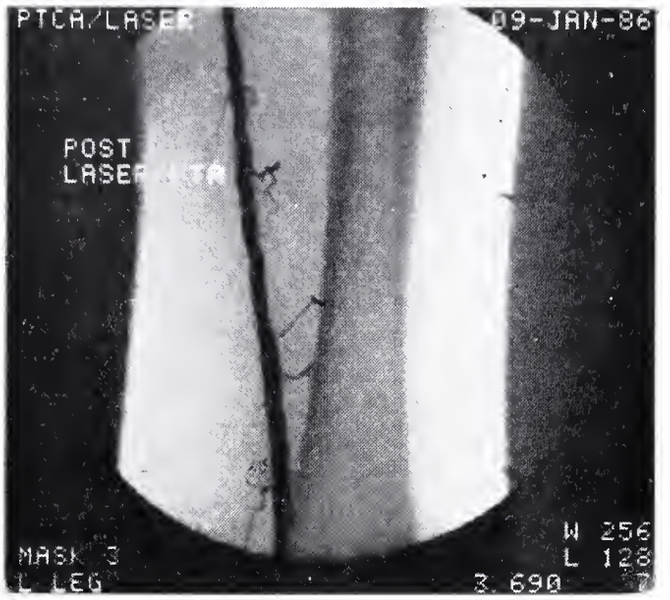


Figure 3.
Following laser angioplasty and balloon dilatation. Digital angiography demonstrates a widely patent vessel.

hydrochloride (Demerol) 25 mg, promethazine hydrochloride (Phenergan) 12.5 mg, and heparin 2000 U IV during the procedure. An additional 6000 U of heparin were given over the next 24 hours.

The patient had prompt relief of his rest pain and developed a palpable dorsalis pedis pulse in his left foot. His course was complicated by transient renal failure probably related to contrast injection and by a mild gastritis caused by post-angioplasty administration of aspirin. Both of these problems resolved over the next four days. At discharge the patient was ambulating well without pain and had an ankle/arm Doppler index of 0.79 on the left. Follow-up at one month after laser angioplasty showed continued improvement of his Doppler index and no recurrent claudication or rest pain.

DISCUSSION

Lasers are optical/electrical devices that produce light with special properties of extreme brightness and directionality. This intense light has a very high power density and is capable of vaporizing most human tissue under the proper conditions. Laser angioplasty uses this power to selectively destroy atherosclerotic plaque. Three mechanisms of laser-tissue interaction have been proposed: thermal, acoustical/mechanical, and photoablative.[4,5] Thermal, the direct heating of tissue, is the most important mechanism in the ablation process. Acoustical/mechanical injury is caused by expanding tissue and fluids and ac-

counts for much of the detrimental lateralization of tissue damage. Photoablation is the interaction of laser photons with molecular bonds. It probably plays little role in atherosclerotic plaque dissolution at the wavelengths and power levels curently employed in laser angioplasty.

The argon laser has been the most widely used laser in cardiovascular work. It has a power output of 12 to 20 watts and produces light with principle wavelengths of 544 and 288 nm. These wavelengths are easily transmitted through quartz-based fibers. Nd:YAG (neodymium: yttrium-aluminum-garnet), CO_2, excimer (*excited dimer*), and other lasers are being investigated for possible vascular use.[4,6,7]

The laser photons are transmitted through a flexible fiberoptic cable. Most of these fiberoptic cables are quartz-based and measure 200 to 400 microns in diameter. An open-tipped fiber allows direct action of the laser energy on the tissue. The most successful fiber currently in use has a metal alloy tip from 1 to 3 mm in diameter. The laser heats the metal tip and the lesion is ablated through thermal interaction. The metal-capped fiber has thus far had a lower rate of vascular perforation than the open-tipped fiber.[8,9] The angioplasty process is monitored with fluoroscopy and angiography. Some researchers suggest angioscopic monitoring of the laser angioplasty.[10]

Potential complications include hematoma formation, pain, infection, thrombosis, vascular spasm, embolization, vessel rupture, and contrast media reaction. These are basically the same as with percutaneous transluminal angioplasty. Vascular perforation, both thermal and mechanical, has been the most feared complication of laser angioplasty. Immediate access to surgical intervention is imperative any time this procedure is performed.

Percutaneous laser angioplasty is a new method for treating atherosclerotic peripheral vascular disease. It holds great promise in reducing patient morbidity and mortality in addition to lowering medical costs. Optimal techniques and proper indications for using this technology are under intensive investigation.

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The Effect of Cigarette Smoking on Female Reproduction

Peter J. Thomford, Ph.D., and Donald R. Mattison, M.D.*

INTRODUCTION

This review will focus on clinical evidence demonstrating that women who smoke cigarettes have decreased reproductive competence by two measures of reproductive function: fecundity (the ability to become pregnant) and duration of reproductive life span as determined by the age of menopause. The second area reviewed will be the effect of smoking on sex steroid production and clearance. This topic is worthy of review because it addresses two important areas: production and clearance of endogenous steroids which control reproduction, and clearance of exogenous steroids contained in oral contraceptives.

SMOKING AND FEMALE REPRODUCTION

In the female, successful reproduction requires a series of integrated events.[1-4] In the human, the organ controlling female reproduction is the ovary which is responsible for gamete production and maturation, as well as steroid hormone production and secretion.[5] Most of the available evidence suggests that the ovary is vulnerable to insult by one or more toxins contained in cigarette smoke[6] as well as other biologically foreign compounds.[7]

Smoking and Female Fecundity: Hammond conducted an extensive investigation designed to explore the effects of smoking on a broad range of health related issues.[8] Some of the questions contained in this survey addressed reproductive function including abnormal vaginal bleeding, an indirect measure of ovarian function. Figure 1 illustrates the incidence of abnormal vaginal bleeding in women who are non-smokers, women who smoke 20 or fewer cigarettes/day, or women who smoke 21 or more cigarettes/day. Among women smoking 20 or fewer cigarettes/day, the ratio of observed to expected vaginal bleeding is 1.20; among women smoking more than one pack of cigarettes/day, the ratio of abnormal vaginal bleeding is 1.67 ($p < 0.01$).

Interestingly, another question in the study by Hammond allowed evaluation of the effect of smoking on abnormal vaginal bleeding from a different perspective. If smoking alters hypothalamic-pituitary-ovarian function producing a disturbance in menses, smoking should correlate with the frequency of hysterectomy. At the time Hammond's study was conducted, abnormal vaginal bleeding was a major indication for hysterectomy, therefore his data should demonstrate a cigarette consumption-related increase in hysterectomy rates.

The effect of cigarette smoking on hysterectomy rates in women ages 30-39 is shown on Figure 2. Four percent of the nonsmokers were post-hysterectomy at the time of the survey. Among nonsmokers 14.8% had irregular menses prior to surgery. Those who were ex-smokers had a slightly higher rate of hysterectomy, close to 5%, with 13.2% indicating irregular menses prior to surgery. Among women smoking one pack or less a day, the incidence of hysterectomy increased to 6.8% with 16.1% having irregular menses. Among heavy smokers, women smoking more than one pack of cigarettes/day, the percent post-hysterectomy at the time of the survey increased to 8.4%, with 16.4% having irregular menses. These data are consistent with the suggestion that

*Division of Reproductive Pharmacology and Toxicology, Department of Obstetrics and Gynecology, University of Arkansas, Little Rock, Arkansas and Division of Reproductive and Developmental Toxicology, National Center for Toxicological Research, Jefferson, Arkansas.

Address correspondence and reprint requests to: Dr. Donald R. Mattison, Department of Obstetrics and Gynecology, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 518, Little Rock, Arkansas 72205.

cigarette smoking alters hormonal control of the female reproductive system.

In the 1960's, Tokuhata conducted a retrospective case-control survey of women dying of breast cancer.[9] This survey contained questions exploring the effects of smoking on fertility (Figure 3). Women were separated into four categories: smokers and non-smokers, white and non-white. Infertility was defined as those women who were never pregnant by the end of their reproductive life span. This study observed that among the non-smokers, the percent of infertility in the total population surveyed, both white and non-white, was about 14%, a figure which is roughly consistent with that observed today among married couples.[10] Notice however, that among smokers, infertility increased to 21.3%; suggesting that some reproductive toxin contained in cigarette smoke, or an associated lifestyle factor, was responsible for the infertility.

More recently, there have been several studies demonstrating that women who smoke have a variety of menstrual cycle abnormalities, increased risk for secondary amenorrhea, as well as alterations in fertility and delayed conception.[6, 11-13] An example from one such study is the data shown on Figure 4 derived from the study of Baird and Wilcox.[11] This study, conducted among women receiving prenatal care in Minneapolis or St. Paul, Minnesota, measured the number of menstrual cycles from cessation of contraception to pregnancy in smokers and non-smokers. The study was actually biased against demonstrating an adverse effect of smoking, by requiring that all of the women included in the study had to become pregnant within two years of cessation of contraception. This study demonstrates that smokers had a cumulative percent pregnancy rate which was lower than the non-smokers. It is especially striking, for example, over the first 18 cycles, where at each cycle, smokers are less likely to be pregnant than non-smokers.

The data of Howe et al. also suggests a cigarette-

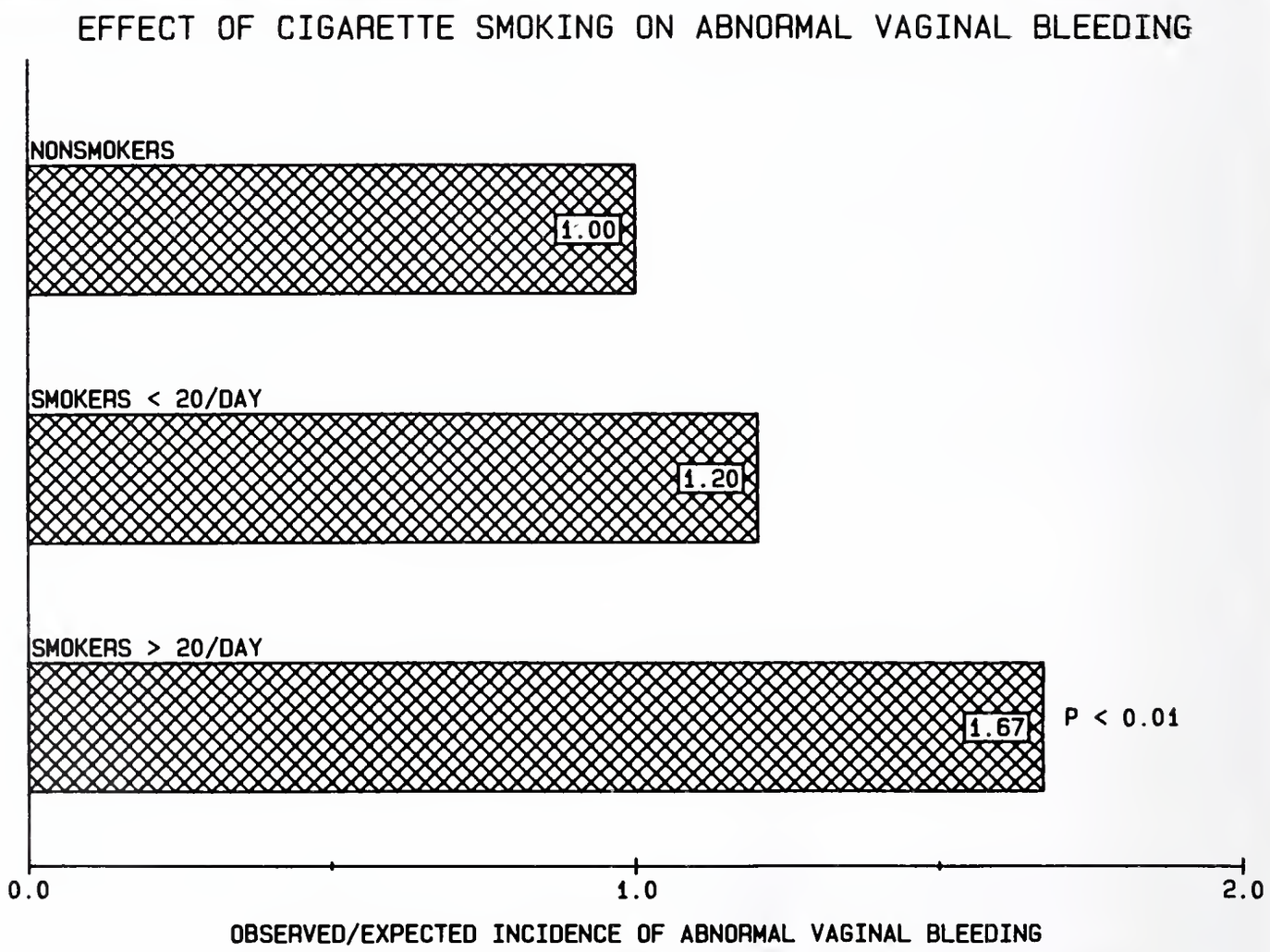


Figure 1.

Effect of cigarette smoking on abnormal vaginal bleeding. The increase in abnormal vaginal bleeding in women smoking $\geq$ 21 cigarettes/day is significant ($p < 0.01$). Data from Hammond.[8]

dose-dependent decrease in fertility.[12] This study, with a different design, evaluated the effect of smoking on the time required to deliver an infant after stopping contraception (Figure 5). Among the nonsmokers only 41% were undelivered 12 months after stopping contraception. Among women smoking 11-15 cigarettes or more than 21 cigarettes per day, however; 43.8% and 50.9% were undelivered respectively. This dose-dependent effect of cigarette smoking on fertility persisted over the 60 months of observation.

Smoking and The Age of Menopause: There have been a series of studies, summarized on Table 1, demonstrating that women who smoke have a decrease in age of menopause.[6,14] Two studies, in fact, have demonstrated a dose-dependent effect of smoking on the age of menopause. A study by Adena and Gallagher[15] demonstrated that the percent of women still menstruating is decreased as a function of smoking status (Figure 6). At most ages the smokers were more likely to be menopausal than non-smokers, and greater cigarette consumption increased the incidence of menopause within that age group.

TABLE 1
SMOKING AND AGE AT NATURAL MENOPAUSE

Study	Difference In Mean Menopausal Age (Nonsmokers — Smokers)
Kaufman et al.[31]	1.7 years
Bailey et al.[32]	1.3 years
Lindquist and Bengtsson[33]	1.2 years
Jick et al.[16]	1.7 years
	1.3 years
Adena and Gallagher[15]	1.0 years
Willett et al.[34]	1.4 years

Modified from Baron.[14]

Similar cigarette dose-dependent decreases in the age at menopause were demonstrated by Jick and his colleagues in a paper that is now almost a decade old.[16] In that study, evaluating the effect

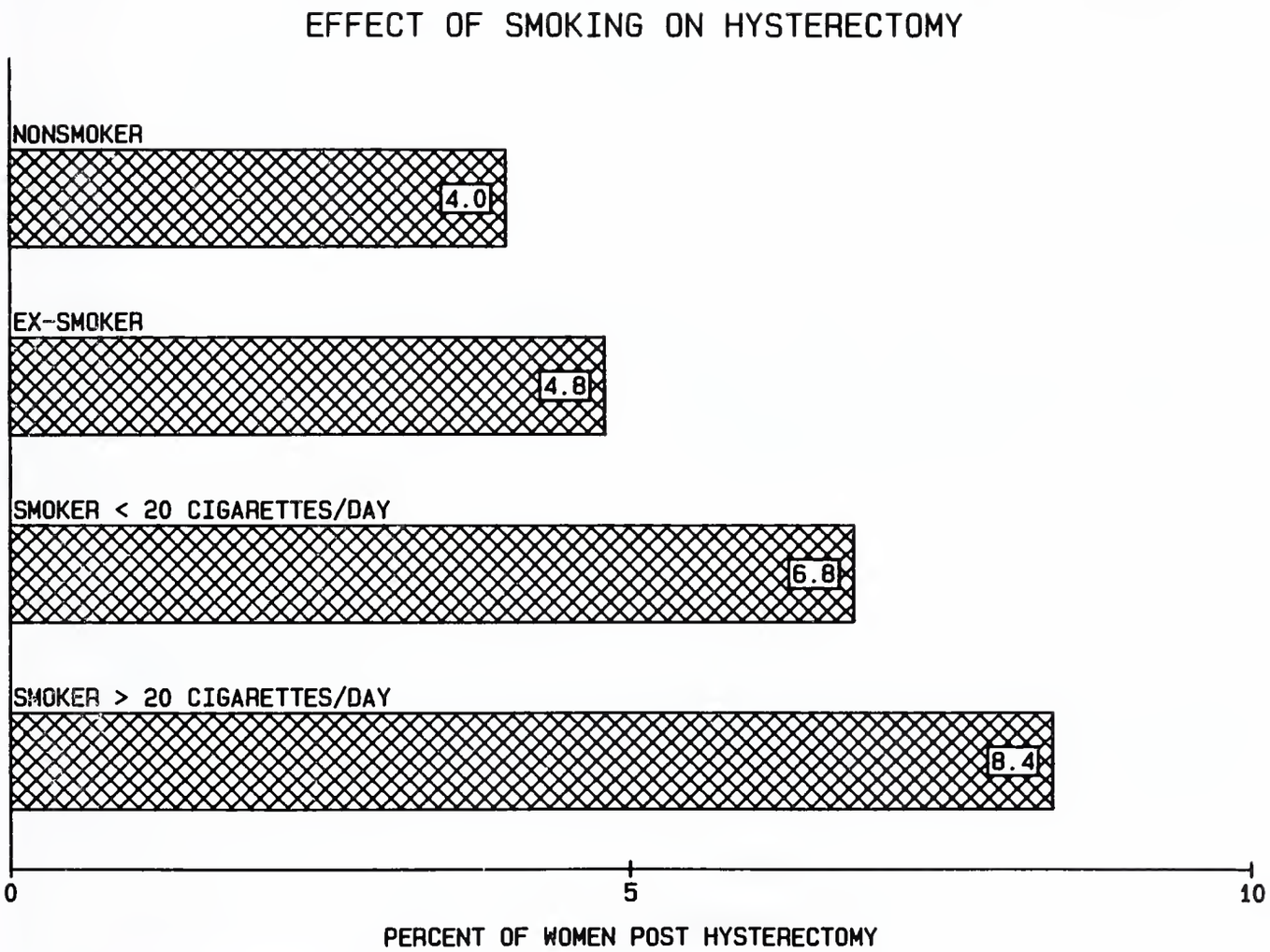


Figure 2.
Effect of cigarette smoking on hysterectomy among women between the ages of 30 and 39. Data from Hammond.[8]

of smoking on menopausal age, they demonstrated that women who smoke approximately half a pack of cigarettes/day had a median age of menopause about a year younger than nonsmokers. Women smoking a pack or more a day had a mean age of menopause that was approximately two years younger.

SMOKING AND HORMONE METABOLISM

Some drugs as well as some naturally occurring steroids such as estrogen,[17] progesterone,[18] and testosterone[19] are metabolized by the same NADPH dependent mixed function oxidase system. The broad substrate specificity of hepatic mixed function oxidases has been attributed to multiple forms of cytochromes P-450.[20] Mixed function oxidase enzyme systems are also present in the lung, adrenal, gonads, skin, intestine and placenta.[21]

The multiplicity and wide tissue distribution of mixed function oxidase enzymes makes their role in steroid metabolism difficult to interpret. It seems clear that many xenobiotics will increase the hepatic metabolism of steroids and decrease their blood levels. What is less clear is the effect that these drugs have on other tissues. What is also not clear is what particular forms of P-450 are induced by which chemicals and which forms are responsible for metabolizing steroids. Mattison et al. have shown that polycyclic aromatic hydrocarbons are capable of inducing aryl hydrocarbon hydroxylase activity in mouse ovaries.[22] Polycyclic aromatic hydrocarbons along with 3,000 other chemicals are components of cigarette smoke. Thus smoking may have an effect on production of ovarian steroids due to its ability to alter steroid producing cytochrome P-450 enzymes.

MacMahon showed that urinary estrogens were reduced in smoking women during the luteal phase but not during the follicular phase.[23] This is consistent with the theory that either ovarian production or urinary excretion of estrogen is impaired due to smoking. A large percentage of

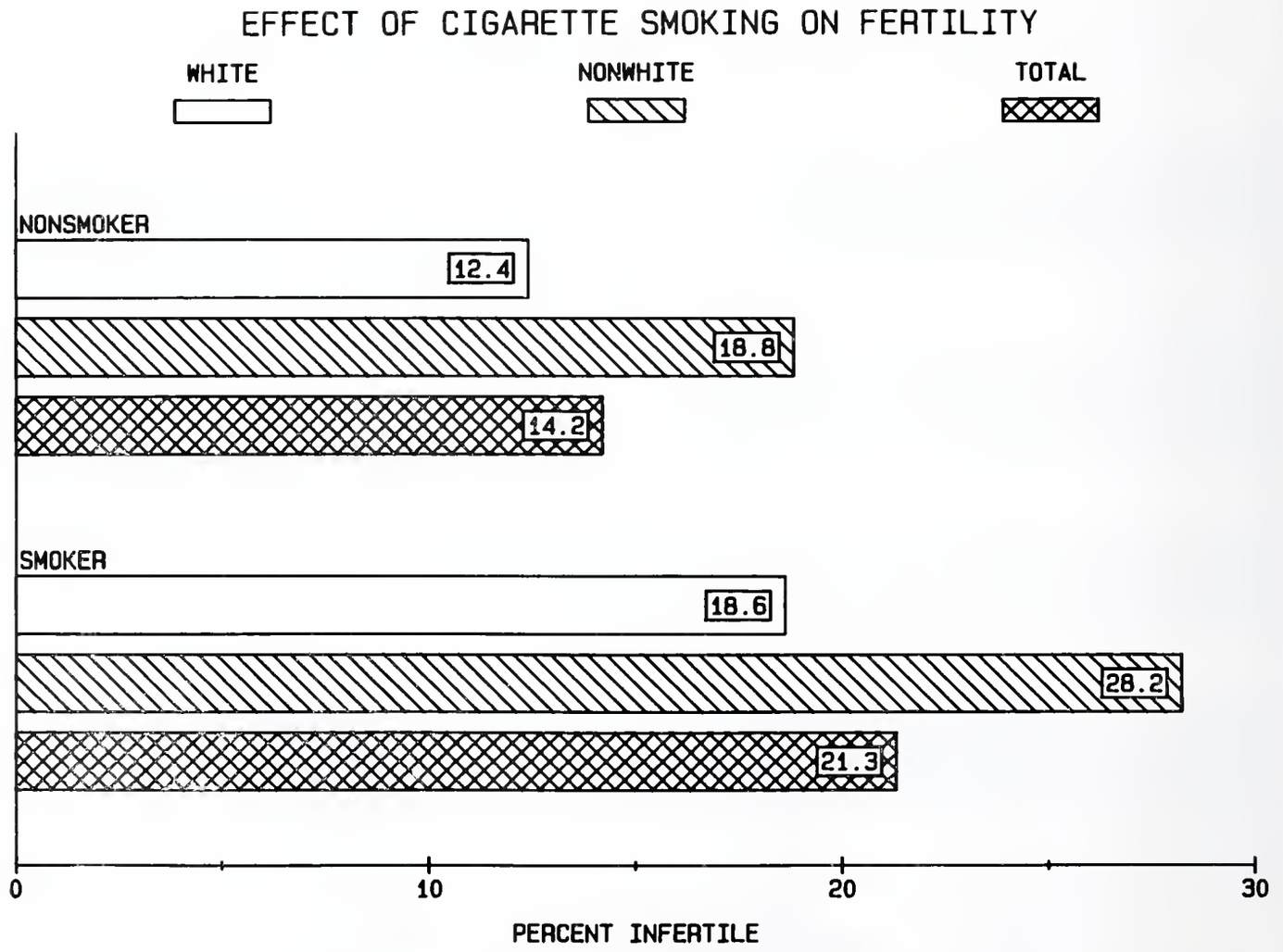


Figure 3.
Effect of smoking on fertility. This retrospective study questioned relatives about the smoking habits of women dying of genital tract or breast cancer and other non-malignant diseases. Fertility data was also obtained using the same technique. Data from Tokuhata.[9]

the sex steroids are excreted via the bile and feces after conjugation. Since the MacMahon study did not measure blood or fecal estrogen, the effect of smoking on estrogen production and clearance is not clear.

One of the few animal studies exploring the effects of smoking on sex steroid metabolism was done in male dogs.[24] Given that cytochrome P-450 dependent metabolism occurs in liver and testes, these investigators measured the effect of smoking on testicular and hepatic hydroxylases. They found that testicular 6-alpha-testosterone hydroxylase was depressed by smoking but that there was no effect on testicular 16-alpha- and 6-beta-testosterone hydroxylase. Hepatic 6-beta-testosterone-hydroxylase was increased by smoking, and serum testosterone and prostate size were decreased. Serum LH was elevated by smoking, perhaps in response to the decreased negative feedback caused by lower levels of testosterone. These studies suggest a major impact of smoking on the hypothalamic-pituitary-gonad-liver axis possibly mediated by changes in gonodal and hepatic steroid metabolism. Whether these effects are due to changes in P-450 dependent metabolism or effects on mitochondrial conversion of cholesterol to pregnenolone is a topic for further investigation.

Cigarette smoking appears to be associated with increased cardiovascular disease when used in conjunction with oral contraceptives.[25] Cigarette smoking has been associated with increased clearance rates of phenacitin, antipyrine, nicotine, theophylline, impramine and pentazocine.[26] However, the clearance of diazepam, pethidize, phenytoin, notriptyline, warfarin and ethonol are not altered.[27] An increse in oral contraceptive metabolism has been postulated to explain the increase in cardiovascular disease among smoking women. However, there is no evidence in the literature to suggest that smoking does increase the clearance of oral contraceptives. One study in fact shows no effect of smoking on oral contraceptive clearance.[27] However, these same authors

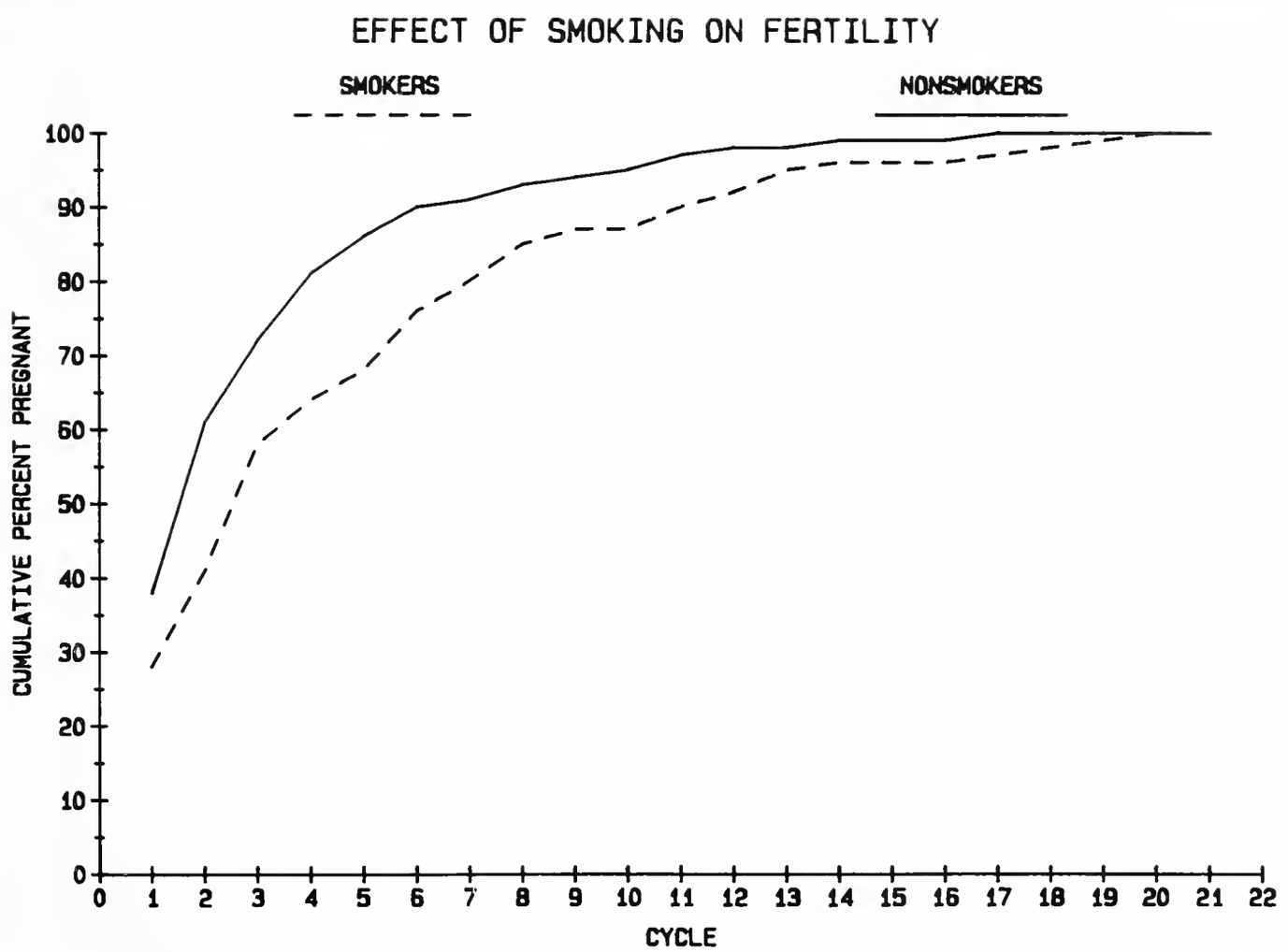


Figure 4.
Effect of smoking on conception. This study by Baird and Wilcox[11] evaluated the effect of cigarette smoking on the number of menstrual cycles required to achieve pregnancy.

suggest that formation of reactive metabolites of oral contraceptives in smokers can not be ruled out as a cause of increased cardiovascular disease. While smoking causes on apparent change in the blood level of norgestrel, ethinylestradiol or noryestrel, there still may be formation of small amounts reactive metabolites.

While smoking increases the clearance rate of theophylline, oral contraceptives decrease the clearance of this drug.[28] Oral contraceptives themselves depress the metabolism of drugs which are oxidatively metabolized such as antipyrine[28] and theophylline[29] and increase the conjugation of oxazepam.[30] Thus one possible explanation for the lack of induction of oral contraceptive steroid metabolism by smoking is that oral contraceptives serve as inhibitors of oxidative metabolism.

Thus it is apparent that smoking has an effect on reproduction and the metabolism of certain drugs. Smoking clearly alters testosterone metabolism and blood levels of testosterone and LH in dogs. One group of investigators has shown no effect of smoking on oral contraceptive metabolism and another group has shown an effect on urinary estrogen production. Baron[14] showed that a number of estrogen related diseases are affected by smoking, including breast cancer, menopause and osteoporosis. All of which suggests that lowered estrogen as a result of smoking may be one of the mediating factors.

CONCLUSIONS

At the present time it is not known what component of cigarette smoke is producing these adverse reproductive effects in women. However because the adverse effects of smoking on reproduction are consistently observed, it is important for physicians to counsel their patients with concerns about fertility to decrease or stop smoking.

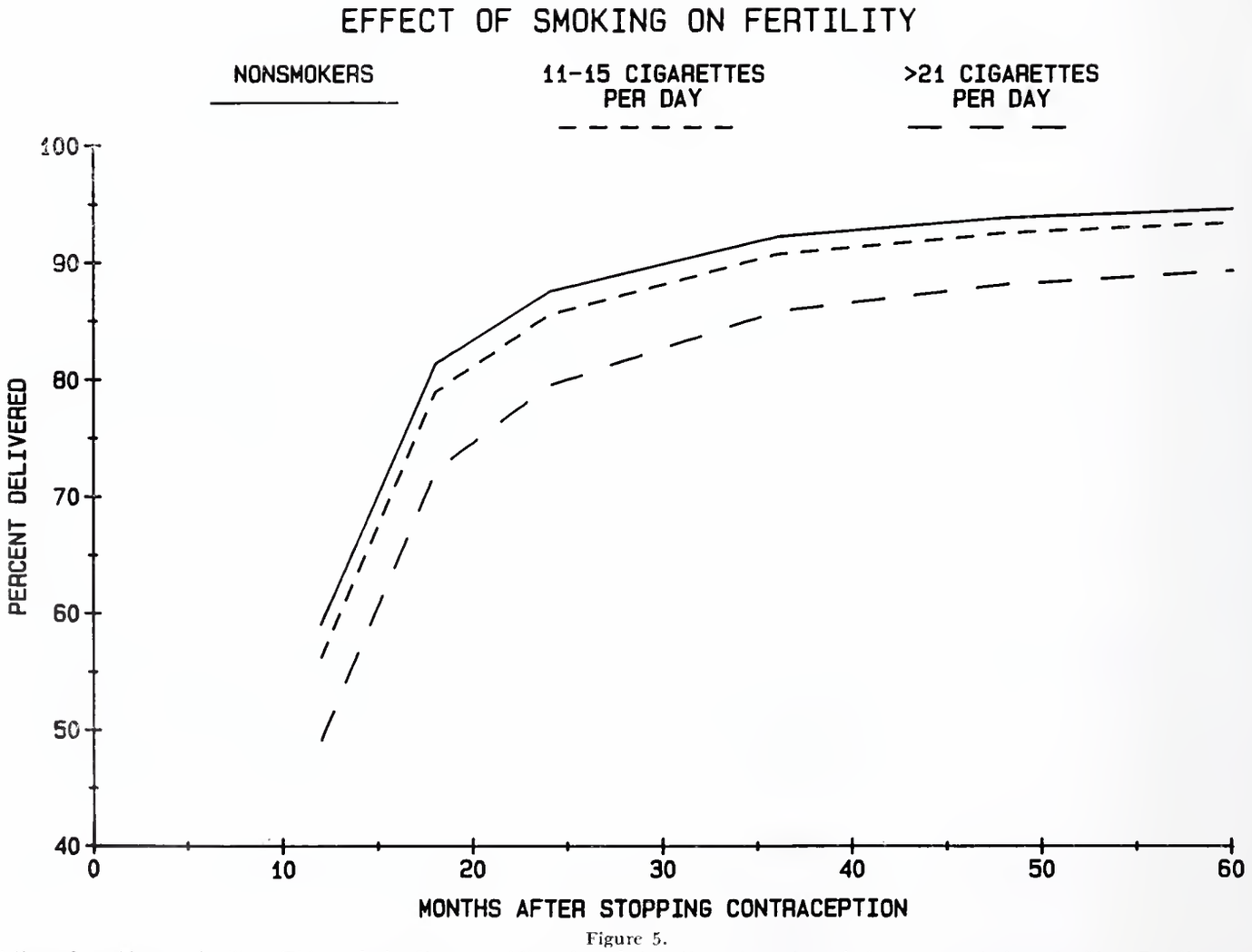


Figure 5.
Effect of smoking on fertility. This study by Howe et al.[12] evaluated the effect of number of cigarettes smoked on fertility. Fertility was reflected indirectly in the number of months required to deliver.

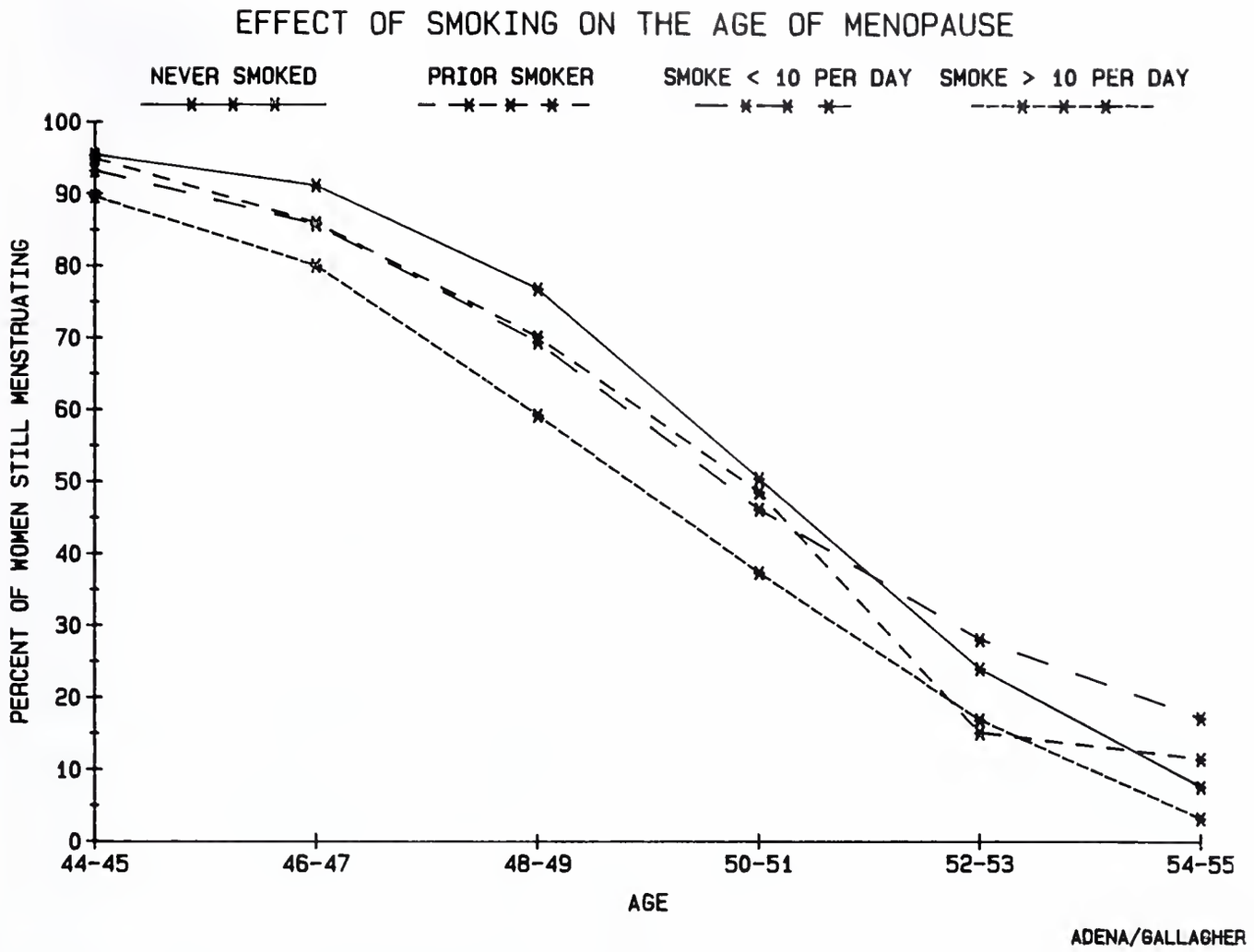


Figure 6.
Effect of smoking on the age of menopause. This study by Adena and Gallagher[15] demonstrates a cigarette dose-dependent increase in the number of menopausal women between the ages of 44-55.

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EDITORIAL

Degenerative Heart Disease

Alfred Kahn, Jr., M.D.

There are numerous studies that bear directly and obliquely on degenerative heart disease. It is of interest that there are reports from various sources in the medical literature that degenerative heart disease seems to be less prevalent than formerly. This is cited in an article entitled "Trends in the Incidence of Myocardial Infarction and in Associated Mortality and Morbidity in a Large Employed Population, 1957-1983" by Sidney Pell and William E. Fayerweather (The New England Journal of Medicine, Volume 312, Page 1005, April 18, 1985). Their conclusions from their statistical investigations indicate that there is a decline in deaths from coronary heart disease—and they feel that this decline is due to a reduction in the incidence of coronary heart disease. They indicate that a number of factors play a role including cigarette smoking, better hypertensive control, efforts to reduce blood cholesterol levels and changes in the dietary patterns in the United States. Despite this statistical improvement in the incidence of coronary artery disease, it is still a major cause of morbidity and mortality in the United States and many factors seem to play a role in its causation—as the diversity of articles on coronary disease attest.

There has been some discussion in the medical literature concerning the role of alcohol in coronary disease. In this regard, Karsenty, Baraona, Savolainen and Lieber have published an article entitled "Effects of chronic ethanol intake on mobilization and excretion of cholesterol an baboons" (Journal of Clinical Investigation, Volume 75, Page 976, March 1985). They point out that both epidemiologic and laboratory studies indicate that the temperate use of alcohol has a beneficial effect in decreasing the risk of coronary artery disease; they cite articles in the literature indicating that in certain primate studies the specific feeding of alcohol decreased the degree of atherosclerosis in the subjects' aortas and coronary arteries. Karsenty, et al., performed some studies on baboons described in the article mentioned above to determine if altered cholesterol metabolism might not be the agency whereby coronary disease was reduced in these experimental animals—the theory being that alcohol increases high-density lipoproteins and the elevated high-density lipoproteins might represent increased removal of tissue cholesterol—and lead to the removal from the body through the biliary tree. They studied 28 baboons on a standard diet. The animals who ingested alcohol had approximately 4.6 grams per kilo per day. During the course of the studies, they used liver samples, analyses of serum samples, studies of HDL-cholesterol turnover, net splanchnic removal or production of cholesterol and steroid balances. Their total studies indicate that both free and esterified fractions of HDL-cholesterol increased after the ingestion of alcohol—but apparently there were two separate mechanisms involved—and they state, with opposite significance pertaining to the removal of cholesterol from the body tissues. The major increase of HDL-cholesterol was in the esterified fraction; this was associated with decreased turnover. By contrast, free cholesterol mobilization from peripheral tissues and its biliary excretion appeared to be enchanced. In their conclusions, the authors state that the esterified cholesterol increase tended to be the result of diminished transfer of esterified cholesterol to low-density lipoproteins; they further state that the enhanced level of HDL-free cholesterol tended to be the result of a heightened exchange in the plasma, increased splanchnic up-

take and increased fecal excretion of cholesterol. They reasoned that the excess of cholesterol found in the feces came from extra splanchnic tissues. They concluded by saying, "thus, these tissues indicate that alcohol consumption favors mobilization of tissue free cholesterol for hepatic removal and excretion. By contrast the increase in HDL-cholesterol (mainly esterified) appears to be a poor indicator of cholesterol mobilization."

Medical students are taught that inflammatory cells, for the most part, produce long-term beneficial effects in the body. Of course, this is not invariably so, and the auto-immune diseases are an example of such. Some work done by Evers, Murphree, Saffitz, Jakschik and Needleman indicate that inflammatory cells actually may increase the degree of tissue injury in myocardial infarctions. Their article is entitled "Effects of Endogenously Produced Leukotrienes, Thromboxane, and Prostaglandins on Coronary Vascular Resistance in Rabbit Myocardial Infarction" (Journal of Clinical Investigation, Volume 75, Page 992, March 1985). Evers, et al., noted that neutrophils and macrophages when found in inflammatory tissue may bring about the following: generate reactive types of oxygen, release protein destroying enzymes, and release arachidonic acid. Arachidonic acid can ultimately form prostaglandins, thromboxane A_2, leukotrienes and hydroxyeicosatetraenoic acids; these end products are derived by two different pathways: the cyclooxygenase pathway and the lipoxygenase pathway. The authors state that previous investigations have found that using cyclooxygenase pathway inhibitors, there is no protective effect in experimental infarction and thus one is lead to the suspicion that the lipoxygenase pathway might be a possible cause of some of the adverse tissue effects noted in myocardial infarcted areas. One chemical stubstance, BW-775C, is said to inhibit both pathways, and this substance has been found to decrease the size of myocardial infarctions. This lead Evers, et al. to suspect that leukotrienes might have an adverse effect in infarcted hearts. The authors used isolated profuse infarcted rabbit hearts to study the metabolic products of arachidonic acid. Evers, et al. treated the isolated hearts with an inflammatory cell agonist (fMLP). This caused the release of end products of arachidonic acid metabolism, including leukotrienes. One of the results of this agonist treatment was coronary artery vasoconstriction, which could be inhibited by an antagonist of leukotrienes. Inasmuch as leukotrienes are released by leukocytes in areas of tissue injury, as a myocardial infarction, the authors were interested in one of its ultimate effects, namely, vasoconstriction; they noted vasoconstriction in the infarcted areas of the rabbit hearts and thus they felt that leukotrienes contributed to tissue injury in myocardian infarction. This is a very interesting article and in it, the authors elaborate on the effects of the cyclooxygenase pathway in infarcted hearts, as well as on the lipoxygenase pathway.

Cigarette smoking, aside from being damaging to the respiratory tract, has been implicated as a cause of coronary artery disease. New articles concerning the smoking of cigarettes appear regularly. The fall-out of information from an article entitled "Cigarette Smoke Can Activate the Alternative Pathway of Complement In Vitro by Modifying the Third Component of Complement" by Kew, Ghebrehiwet and Janoff (Journal of Clinical Investigation, Volume 75, Page 1000, March 1985) is not fully known. This article is more oriented toward pulmonary disease than cardiac disease, but it is entirely possible that the information contained in the article may have some cardiac bearing. The authors were lead to study cigarette smoke as a factor in the development of pulmonary emphysema—and they were puzzled as to how smoke caused emphysema, which is characterized by tissue damage with obvious proteolytic activity on lung interstition and elastic fibers. As a consequence of their puzzlement about smoke and lung destruction, the authors undertook an investigation to determine if cigarette smoke effected serum complement. They concluded, from their studies, that "these data indicate that aqueous whole cigarette smoke solution can modify C3 and activate the alternative pathway of complement, perhaps by a previously unrecognized mechanism." As they further point out, if this actually occurs in living humans, the activation of complement might explain the pulmonary leukocyte recruitment observed in individuals who smoke. It would be interesting to know exactly what the effect of modifying the third component of complement is in cardiac disease.

These articles reflect some of the studies, both direct and tangiential, aimed at explaining arteriosclerotic disease of the coronary vessels.

"From Other Years"*

"From Other Years will publish some biographies of well-known Arkansas physicians, in addition to interesting items from Medical Society meetings from many years ago."

The Monthly Bulletin of the Arkansas Medical Society
Vol. 1 No. 1 15 June 1904

* * * *

NINETEEN GRADUATE

Out of a class of twentythree at the Medical Department of the University of Arkansas, only four failed to pass the required examination. A class of nineteen was given diplomas by Dr. James A. Dibrell, dean of the faculty, April 8, at the annual commencement exercises. Rev. J. K. Smith, Little Rock, delivered the address of the evening.

* * * *

The Texarkana meeting was largely attended, and more work done than ever before. The new organization, as recommended by the American Medical Association for State Societies, is the result of years of thought by the leading men of our profession.

* * * *

There are still some rumors in circulation to the effect that the frightful death of Dr. R. G. Lightle, who was burned to death in his barn at Searcy, was due to foul play. A thorough investigation was made at the time by the coroner's jury and they found that it was due to accident.

* * * *

Dr. A. J. Vance, of Harrison, attended the International Association of Railway Surgeons in Chicago. Dr. Vance is surgeon for the St. Louis & North Arkansas Railroad.

* * * *

The Secretary desires to call attention of the members of the Society to the fact, that there is no file of the transactions of the Arkansas Medical Society. Only a seal, card index and the transactions of 1903 compose the archives. I would like to secure for preservation (for the Society) a copy of the transactions for all the years. If any member has a copy or copies, will you kindly donate one or more to the Society? The Society was organized October 13, 1875. Copies of transactions for the twenty-eight years are wanted. Send to the Secretary.

* * * *

The transactions of the Arkansas Medical Society, 1904 meeting at Texarkana, is now in the hands of the printers, and nearly ready for delivery. It will be bound in cloth and suitable for any doctor's library.

* * * *

NEW MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

Arkansas: Flinn, B. W., Little Rock; McKinney, Asbury, Corning; Thomason, H. E., Siloam Springs; Toland, W. H., Mineral Springs; Inman, M. M., Quitman.

* * * *

Upon the retirement of J. R. Baker as president of the Cleburne county bank, Dr. C. F. Crosby became president.

* * * *

The following counties have no medical society; or if there is an organization in any, they are not reported to the Secretary of the State Society: Bradley, Crittenden, Fulton, Izard, Madison, Marion, Poinsett, Polk, Scott, Stone, Van Buren and Sharp. We hope our Councillors will be able to organize all of these before the next meeting.

* * * *

Dr. C. R. Shinault, ex-President of the Society, recently resigned from the State Board of Medical Examiners, on account of his removal from Helena to Little Rock. The House of Delegates selected the names of three other members for Governor Davis to choose from. The governor appointed Dr. B. L. Harrison of Jonesboro, to fill the vacancy. Dr. Harrison was one of the three selected by the House of Delegates.

* * * *

Algernon S. Holderness, M.D., Arkansas, died at his home in Fordyce, Ark., April 29, aged 71.

* * * *

Dr. Oscar E. Jones has been re-elected Health Officer of Newport, and chairman of the local Board of Health.

* * * *

Dr. E. R. Dibrell, of Little Rock, has resigned from the Board of Pension Examiners, and Dr. J. R. Dibrell has been appointed for the place made vacant, and assigned to duty.

* * * *

Dr. J. W. Hays, Sr., of Eureka Springs, is in bad health. Every member of the State Society would rejoice to learn of this good man's entire recovery.

Address to the Arkansas Trial Lawyers Association

Charles F. Wilkins, Jr., M.D.,* John P. Burge, M.D.,** and J. Larry Lawson, M.D.***

JOHN P. BURGE, M.D.

I don't expect the remarks made this morning to fall upon totally sympathetic ears. When your proposals to a group, no matter what its function, may result in a modification of its income in a downward direction you don't expect them to be received with open arms. Likewise, the intention is not to engage in a debate over whether or not a *crisis* exists in medical liability. One man's crisis may represent another's windfall. What we do hope to present is an overview of the present medical liability situation as we see it; looking at its history, contributing factors, proposed solutions, the viewpoint of the practicing physician and some comments about the insurance industry.

Where do they all come from, these "malpractice suits"? There was a time when you were no more likely to sue your doctor as you were your minister (this situation, which I might add, has also changed). In fact, you may have been less likely to sue your physician since supplying your spiritual needs could, on occasion, take a back seat to your more immediate and demanding physical needs. This was the time of the less mobile and less scientific society, a time when your physician was your closest friend, neighbor, a confidant to whom you could turn to in times of need. It may surprise many of you to know that this situation still exists in a significant part of our society. Your physician might not always be able to cure your problems but he was there providing what comfort he could. Medicine was an art to be admired and revered.

Strangely enough as medicine developed scientifically and as we became more capable of doing something about previously incurable illnesses, much of the mystique surrounding medicine was lost and it became answerable to many of the shortcomings of any scientific endeavor. Its fallibility became less forgivable. During World War II, there were great strides with the advent of antibiotics and with advances in surgery and anesthesia. Quality medical care created, as the economists say, "A taste of medical care", which could be indulged after the War because of the increase in income and the growth of hospitalization insurance. With the growth and availability there was a concomitant increase in litigation. The mid-seventies saw a precipitous rise in the number of malpractice suits. Eighty percent of all malpractice suits filed from 1935 to 1975 were filed after 1970. Insurance premiums for some specialties rose almost 500%. Most commercial insurance carriers pulled out of the medical liability insurance market. As a result, insurance was either difficult and expensive to obtain or not obtainable at any price. The number of companies offering professional liability insurance dropped from 39 to 8. This lead to two major developments.

1) Over 300 pieces of tort reform legislation were enacted. Virtually every state passed some form of statute.

2) Physicians and their associations formed their own insurance companies. These were known as the physician mutuals or "bedpan mutuals". They were generally not for profit, physician owned, or medical association sponsored. These measures did relieve, to some degree, the availability problem but there was no reduction in the number and severity of lawsuits. In 1975, there were three one million dollar verdicts. From 1979 to 1984, there were more than 285 million dollar verdicts. The average award against physicians in 1984 was $950,000.00. The physician owned insurance companies, operating in at least 36 states and the District of Columbia, experienced an aggregate underwriting loss of $385,000,000. The number of claims filed now are three times as many as there were ten years ago. The result is that availability and affordability of insurance are now in serious question again.

Well, who's to blame for all of this? I can envision a cartoon wherein physicians, lawyers, insurance companies, jurors and the general public are all pointing with both hands at each other saying "they're to blame" and in a sense they all are. How about the physicians? There can be no argument that there have been great strides in medical care over the last four decades. Physicians are better trained than ever and the quality of medical care is at an all time peak. Many diseases which were uniformly fatal in the past are now curable and progress is being made continuously yet it is just these advances that have fostered, to some degree, unrealistic expectations.

*Post Office Box 788, Lake Village, Arkansas 71653.
**3105 West Main Place, Russellville, Arkansas 72801.
***#1 Medical Drive, Paragould, Arkansas 72450.

from the public that every treatment or service should produce perfect results. Physicians have been willing to bask in the limelight of these medical miracles and when the miracles doesn't happen or worse, a complication develops, then the next stop is the attorney's office. Perhaps this would be as good a time as any to interject a definition of terms. The great fallacy is to equilibrate a bad or undesirable result with negligence. The term malpractice implies negligence but actual negligence bears little relation to the majority of malpractice suits filed. Malpractice has been defined as "the failure to follow standard medical practice at the time that care is given. An incorrect diagnosis or the selection of one of several possible treatments does not represent malpractice if the decision was medically reasonable". Chief Judge Sol Wachtler of New York has ruled that a "physician's duty is to provide the level of care acceptable in the professional community in which he practices. He is not required to achieve success in every case and cannot be held liable for mere errors in professional judgment". This is not to imply that negligence never occurs. Certainly, incompetent physicians do exist and every effort is being made to weed them out and remove them from active practice. However, this only can be adequately accomplished through vigorous self regulation and peer review. I'd dare say that even the harshest critics of our present system would not state that 60% of obstetricians are incompetent yet that is the exact percentage who have claims filed against them. The Health and Human Services Secretary's Commission on Medical Malpractice has studied the situation and reported in 1983 that 54% of actual closed malpractice claims were not legally meritorious in terms of liability. One factor over which the individual physician may exert considerable control and which may be extremely significant in preventing claims is the factor of communication. A significant number of claims may be prevented by better communication between the physician and his patient or the patient's family.

How about the legal profession? It seems that no speech would be complete with quoting the words of wisdom from some great scholar of times past and Shakespeare is a particular favorite. I must throw in a little personal touch however. My wife Eleanor's maiden name was Nunnery and she was a flight attendant for American Airlines for some eight years. She once told me that if she had one more passenger look at her name tag and quote to her from Hamlet "get thee to a nunnery" she would scream. I am sure you are equally tired of hearing the quote from Falstaff alluding to the fact that what we should do is get rid of all the lawyers. *Nonetheless,* there are three times as many lawyers practicing now as there were in the 1950's and one-third of the lawyers in the United States started practice in the past five years. Two-thirds of all the lawyers in the world are in the United States and it costs thirty-seven times more to run the tort system now as it did in the 1950's. In 1984, there were one civil suit filed for every fifteen Americans. There can be no denying that certain members of the legal profession have encouraged, yes solicited, malpractice suits. You need only look at your television to convince you of that. What have been characterized as "activist judges" who have granted large judgments on thin legal grounds have contributed a significant amount to the overall liability problem.

I will mention only briefly the contribution of the insurance industries since Dr. Wilkins will be discussing this. It is their claim that in 1985, for every $1.00 in premiums received, they paid out $1.16 in cost and claims. This can be partly blamed on what is known as "cash flow underwriting". This came about in the early 1980's when interest rates were very high. With an 18% interest rate, an insurance company could pay out $1.10 for every $1.00 they took in premium and still make eight cents on the dollar. With the drop in interest rates, however, this came to a screeching halt. I would mention however, the problem of reinsurance and the fact that most of the major companies who provide reinsurance from outside of the United States are withdrawing from the U. S. market. For instance, Lloyd's of London states that in the past year the United States accounted for 12% of their business but for 80% of their losses.

Next, let's look at the public in general and juries in specific. There is a prevailing feeling that someone must be responsible for every unfortunate incident and that some one should pay for it. That applies to every aspect of society; from industries, to small businesses, to schools and communities, to physicians, even to the host of a party. Chief Justice Warren Berger has stated, the "American public has an almost irrational focus—virtually a mania—on litigation as a way

to solve all problems", but there are problems peculiar to medical malpractice cases. Juries tend to be emotionally vulnerable to severely injured and suffering plaintiffs and this interferes with their objectivity. A recent study by the Rand Corporation Institute of Civil Justice bears out this finding. In this study they found that "the severity of the plaintiff's injuries cannot explain the large size of malpractice awards". "Among plaintiffs with the same injury, a malpractice plaintiff receives an award five times the size of an award to an injured-on-property plaintiff, and almost twice as large as the award to a work-injury or product liability plaintiff". As one defense attorney has pointed out, "the jurors know that physicians are well insured and they believe that the award won't come out of the doctor's pocket. It becomes a case of helping the injured people collect from the giant insurance company". It has even been theorized that there is a "backlash" and that some jurors view trials as a chance to get even for having to sit in a doctor's waiting room for hours, and that this provides them the opportunity to vent their hostilities. Interestingly enough this seems to be more the case in the urban areas than in the rural areas.

Finally we should take a look at the tort system itself. At the present time it is overcrowded, expensive and slow. The average malpractice suit takes eight years to get through the courts. Even if the plaintiff wins his suit, he receives only about 30% (with some figures as low as 18%) of the award, the remainder going to attorney's fees and court costs, but, there is an even more disturbing trend in tort law and that is its tendency to punish those who have done nothing wrong but have the resources to pay damages. The physician is generally well insured and as such represents a readily available target. This trend in tort law, however, is not just limited to medical liability. Medical liability represents only one part of a much larger liability problem which has been called the most serious threat to business today. Schools, banks, local governments, small businesses are all finding it extremely difficult or impossible to obtain liability insurance. This past year the banker's blanket bond increased 700%. It has resulted in removal of certain products from the market for no other reason than the high cost of liability insurance. Bendectin was taken off the market when its liability insurance reached $10,000,000.00 per year. Vaccines for diphtheria and whooping cough are in short supply when all but one company halted their production because of the liability. The Copper 7, which is an intrauterine contraceptive device, has been removed from the market by G. D. Searle in spite of the fact that it has been ruled safe by the FDA. Although no damages were awarded, the expense of defending the device in court did not warrant continuing its production. In the medical fields physicians are modifying their practice to avoid services that have a high risk factor. This is particularly true in the fields of obstetrics and in neurosurgery where malpractice premiums have risen to as high as $140,000.00 a year. It has resulted in a significant number of physicians relocating their practice or discontinuing practice entirely.

Be it not for me to traipse the overused path of reason and logic but it seems that a problem *does* exist, not only in medical liability, but in most other forms of liability as well. There is a general concensus especially among the "sue'ee" that this is a national problem and that is a tort problem.

As you might gather, there are numerous recommendations for tort reform but I will limit my comments to those dealing with medical liability. Some of the recommendations include:

1) Structured settlements with periodic payments over an injured claimant's lifetime rather than a lump sum payment.

2) Eliminating the collateral source rule which prohibits introduction into evidence of any information about compensation a plaintiff may receive from sources other than the defendant.

3) Limiting non-economic damages such as awards for pain and suffering, mental anguish, and loss of consortium.

4) Restricting attorney's contingent fee. The recommendations out of the AMA have been for a sliding scale for attorney's fee with a declining percentage paid to an attorney as the size of the award increases. I might add that in some circles the recommendation has been to do away with the contingency fee entirely citing the fact that the United States is the only country except for some small Canadian provinces which allows a contingency fee.

5) Establishing fair and appropriate standards for expert witnesses.

6) Establishing minimum standards to sue and imposing penalties for frivolous suits.

7) Making a system of binding voluntary arbi-

tration available.

8) Establishing shorter statutes of limitations.

9) Using a contract or agreement between parties in anticipation of a failure of the desired performance by the health care provider. This would be similar to a flight insurance purchased before boarding an airplane. There have been recommendations to remove medical liability from the court system entirely and to eliminate fault from the system. There appears to be increasing public support for tort reform particularly in a time when cost containment in the provision of medical care has become so important. At the present time, estimates are that up to 30% of the total cost of health care in the United States is due to physicians practicing preventive medicine. The Trial Lawyers Association, in times past, has been accused of responding to searches for solutions with self-serving advocacy. I am a realist; I never expect physicians or lawyers to be totally altruistic in their motives in dealing with the present problems. It is very easy to be incensed by the situation of a plaintiff when, by championing his or her cause, you net yourself a substantial contingency fee. It is likewise easy for physicians to be construed as "protecting the turf". But this is not just a "pocketbook issue" for physicians. There is a characteristic common to a large percentage of members of the medical profession engaged in the active practice of medicine. They are there because they love what they do and like helping people. They will go that extra step and push themselves to the edge in order to continue their profession. But I dare say, most will not take that final leap into oblivion and offer themselves up as sacrificial lambs to a system that provides them no assurance that nothing short of the perfect in an imperfect and inexact science is acceptable.

There is an element of paranoia among physicians where the legal profession is involved. I still get a funny feeling in my stomach when I receive correspondence with an attorney's letterhead. I am not a student of Latin but if you trace the word tort, it comes from the Latin word tortum. One of its meanings is to twist from which we get our word torsion. There is a medical condition called torsion of the testicle which is exquisitely painful and which generally produces cries of anguish from the afflicted individual. I am afraid this too often describes the physician's perception of his relationship with the legal profession.

There is no single answer to the liability problem just as there is no single cause, but we cannot go indefinitely in the present direction. To do so for the medical profession could result in disastrous reductions in availability of certain critical services and an overall reduction in the quality of medical care. For the legal profession, it may result in totally destroying the liability insurance system and thereby killing the goose that laid the golden egg. It is time for reasonable members of both our professions to seek common grounds through non-self serving dialogue to come to grips with this problem for the ultimate benefit of the patient and client.

CHARLES F. WILKINS, JR.

Ladies and Gentlemen:

I would like to say a few words about the role of the insurance companies in the development of the so called "Liability Crisis".

In yesterday's "Arkansas Gazette", Mr. Ralph Nader was quoted as saying to the Commerce Commission that, "Insurance companies are sacred cows who are feeding the public a line of bull". I seldom put a great deal of credence in the predictable Mr. Nader's statements, but there is, undoubtedly, some truth to his view.

The advent of antibiotics and advanced medical techniques some 40 odd years ago skewed the life tables to an extent that life insurance companies reaped a huge windfall from premiums. It seems to me that they may expect to reap similar windfalls in all forms of insurance.

For 13 years, I served as Chairman of the Insurance Committee of the Arkansas Medical Society. During that period, our attorney, Mr. Gene Warren, steadfastly maintained that we physicians were being charged premiums far out of proportion to our losses. However, we were *never* able to find out what losses actually occurred.

From my experience, I am certain that at least two insurance companies writing medical liability, colluded to produce monopolies in several states. They simply divided them up! We were at their mercy. Anytime we complained, the only company writing in Arkansas would threaten to move. They used this lever to switch from occurrence to claims made coverage and repeatedly for increases in premiums.

Let me give you an example—when an independent insurance company moved into Arkansas and began to write medical liability, the premium at our clinic was about $39,000 per year. The new

company made a better offer. Three representatives from the home office of our old company suddenly appeared with the story that an error in computation had been made and they could offer the same coverage for $10,000 less. I queried, "what about our previous high premiums?"—Oh! Nothing can be done.

Yes, I believe the insurance companies have taken advantage of the situation in all forms of liability coverage. However, there undoubtedly is a crisis due to the runaway litigation in our litigious society, the unusual and unique interpretation of the law by our courts, and astronomical awards.

The system we have is on a self-destruct course. New laws are needed, but our American system requires that we move with caution so that the courts are neither allowed to redistribute the wealth nor deny the poor equal opportunity for justice.

Injuries do occur to patients in the course of treating illness. Sometimes, it is due to malpractice. I feel the injured should receive just compensation, but I don't believe this should be done with the air of a lottery.

I must have medical liability coverage or I cannot practice medicine. My patients pay this insurance premium. If it gets so high that recovery is not feasible, then I must quit and so must every other physician.

The name of the game is insurance coverage. Physicians' fees are frozen and have been for the past year. We have had no raise in Medicaid fees since 1977. Medicare pays 48% of the cost of care in our clinic at the present. The private sector can absorb only so much of this widening gap. Frankly, I don't have the answer. I hope you do.

J. LARRY LAWSON, M.D.

I want to make a few amends to my introduction a few minutes ago. I do live in Paragould and have for the past eighteen years, but in fairness to my friends in Montgomery County, I was born in metropolitan Mt. Ida one hot Saturday afternoon literally on the kitchen table in 1932. The doctor who had been attending the expectant mother was not on hand because his son had borrowed his car. This left the course of labor in the hands of her only attendant, let's say a mid-husband, and he and her eventually delivered a ten pound cyanotic breech baby. As I grew up and started to school it became apparent to my teacher that I had probably sustained Drain Bamage at delivery. If I had only known before I was 21 what I know now, I think I would have sued my mid-husband for this irreversible cortical damage.

After the statute of limitation passed I realized that planned babies were a myth because my parents are of above average intelligence and 32 was not a vintage year for anything but an accident.

Actually, after our house was torched in 1935, we metastasized to Conway where I finished high school and then to the University of Arkansas to get my general medical background preparation with a degree in agriculture in 1954.

Following a two year *stinch* in the Air Force I started pre-med at age 25, went through medical school and eventually a major in surgery at the University of Missouri only to arrive here today to bring you trial lawyers a message about malpractice.

I want to assert in the beginning that I am *for* the Constitution, good government, law, lawyers, the military, the police, marriage and the family, the churches and all principles and orders that enhance a progressive stable society. The question that has been brought to the Council of the Arkansas Medical Society by your organization's president is "Why are doctors not willing to help lawyers in their suits against other doctors?" (Slide #1—Whiplash)

This slide represents the physicians impression of the level to which lawsuits have degenerated. True malpractice, that is, negligence, is unarguable among most physicians; a bad result, however is another matter. Malpractice to the general public is equated to physicians. Hardly any other profession is considered when speaking in general terms of malpractice. Barratry, however, is an unknown word among the general public — I suspect that since it usually takes an attorney to sue an attorney, the work will continue to lie dormant. There have been ripples lately of attorney versus attorney but to date we have not noted any groundswell in that direction.

Nine years ago I had my first encounter with malpractice liability in federal district court and at 5 p.m. on the first day, the judge told my attorney he did not know why I was involved in the case and excused me. Twenty-five years ago I heard the famous quote, "The thing speaks for itself!" After unnecessarily spending three years and its accompanying loss of sleep, energy, re-

search, money, sense of humor and one day in court, why was the plaintiff lawyer or any losing lawyer not guilty of barratry? Barratry, according to Black's Dictionary of Law is "the offense of frequently exciting and stirring up quarrels and suits either at law or otherwise".

After the trial and after the jury had also ruled in favor of the other physician, I talked to three attorneys in an effort to sue the plaintiff attorney for barratry. I am sure that you are as shocked as I was that they independently could not find any merit in my idea. I use the term losing lawyer since the plaintiff lawyer does have a chance to gain something monetarily, but the doctor defendant has only once chance and that is to lose—100% of the time. I have also not lost sight of the man with the white hat—my attorney—who has received his pay by way of my insurance company—usually over a four year period representing many delays.

Mr. Tom Goddard of the Association of Trial Lawyers of America says, "the reason there are so many malpractice suits is because there is so much medical malpractice." This is very interesting since 1794 only 18 years after we became a nation, and when the first medical malpractice suit was filed in the United States, medical training was not only scarce but crude and malpractice could have been rampant. Now, in the 1980's with excellent training available in every state, and the state of practice probably being the world's best, the occurrence of malpractice claims is at an all time high. Statistically, in the 40 year period between 1935 and and 1975, 80% of all claims filed were during the last five years of the study. From 1935 to 1955, there were only 605 cases recorded in the United States or about 30 cases per year. However, in 1983 alone, there were in excess of 42,000 malpractice claims in the United States while at the same time a Texas survey showed that 55% of all laymen questioned thought there were no more physician mistakes made then than in the previous ten years.

It is usually concluded after discussions of this nature that malpractice filings are justified to "get rid of the bad doctors". Getting rid of the bad doctors is the purpose and performance of the respective State Medical Boards, while in actuality the malpractice suits are generally brought against the Michael Debakey's, the Denton Cooley's and the Larry Lawson's. These last physicians are obviously the ones who have active practices and subject themselves to the difficult cases. You should be reminded that there are days when surgeons like myself take on possibly three indigent cases in one day knowing that there is no monetary reward in the future, but that each case gives you a potential one million dollar exposure in the courts. In fact, each of my experiences with malpractice have been by the indigent or near indigent patients. I might add that each of my physician brothers, who have also been honored in one way or another by the medical profession, have also been sued only by the indigent patient.

Yes, without question there is a crisis in malpractice claims but I am not impressed with their being a crisis of malpractice. It could be argued, maybe, for liability but not for malpractice for which we are accused. A discussion of the liability industry is pertinent to this overall problem, but not specific to this particular question that has been posed.

There is also a big difference between malpractice and a bad result as witnessed each time an attorney loses a case. As stated by Mr. Robert R. Clohr in the Association of Trial Lawyers, "medicine is practiced by humans and to err is human". My question is, does this open-ended statement by implication exclude attorneys from being human and/or erring? If the answer is yes, then why don't we see 84,000 trials for barratry a year since there are approximately two times the number of lawyers in the United States as there are physicians. Or, if the answer is no, then where are the humans in the practice of law? Are these ratios the reason that our lawyer-laden state legislature insists on two law schools in one small state, while also insisting on raising medical school enrollments at a time when all other medical schools in the United States are decreasing theirs?

(Slide #2) "If it is all right for us to beat up our friends, what space of safety and peace is left for us?"

Is there a light at the end of the tunnel? Very faint at best.

It appears that nearly everyone from writers to attorneys want to practice a little medicine each year—yet no one in the past 192 years has stepped forward with significant help regarding the liability problem. Physicians can't help, the public hasn't helped, juries are increasingly severe, and my personal observation is that the insurance carriers are only becoming more corpulent on the

spoils of the system. We haven't noticed any real concern coming from either the legislature or Congress. Our legislature is made up of 19% attorneys, thus one out of every five votes is cast by an attorney. Our Congress is made up of 47% attorneys, thus one out of every two votes is cast by an attorney.

I want you to understand that I am not opposed to lawyers—or to lawyers being in political positions, but our Constitution was written by, for and of the people. It is obvious with the above figures that the intent of the Constitution is not in keeping with the rest of the voters regarding present day submission, voting and institution of the laws. Do not consider that I blame the lawyers for this stacked deck. The only reason they are in office is because the voting public said they could be there. Therefore, I believe that a more enlightened, involved public will be required before the voters discover the difference between law makers and lawyers.

The faint light that I alluded to is in the shape of the liability crisis that is now here and will be the force that brings out the debates and then the votes. It may not always be best, but when we see a collision between money and principles, money usually wins out. With a more informed voter, maybe we could look forward to being tried truly by our peers as in a professionally trained jury or at least a trained foreman of the jury which would be in keeping with the complexities of today's cases. Our laws were extracted from English Common Law, which in turn were derived from the laws given to Moses by God. These laws replaced a set of laws known as the Code of Hammurabi—this written Law of the Mesopatamian Valley and Egypt was the one which first stated—an eye for an eye. If a physician caused the loss of a patient's eye—the physician in turn, lost his eye. Ophthalmology obviously did not begin until some time later.

Congratulations, for we have now come full circle to the barbaric Code of Hammurabi as far as the physician is concerned. We shouldn't be surprised, however, because we continue to see the assault on all sides of the Judeo-Christian ethic which founded this country. Without reforming legislation, the physician's only real protection is to quit accepting high litigation risk patients, retire, or quit performing procedures carrying the highest suit rate. This phenomenon is now taking place.

MEDICINE IN THE NEWS

NATIONAL MEDICAL RESEARCHER MATCHING PROGRAM

The National Medical Researcher Matching Program (NMRMP) is an information service that attempts to match professional opportunities in postdoctoral medical research in the United States and Canada, with eligible individuals worldwide. These individuals can be M.D.'s and Ph.D.'s or foreign equivalent degree holders in medical and health related areas, who are interested in conducting research in the United States or Canada.

By operating a computerized information network which maintains direct contact with over 80,000 medical research directors in the United States and Canada, the NMRMP is able to provide the eligible individuals with information regarding at least ten research opportunities each time for four times per year, according to the individual's preferred specialization. For detailed information, prospective applicants may contact: National Medical Researcher Matching Program, 1109 Main Street, Suite C, Boise, Idaho 83702; telephone 1-800-245-1886, 1-208-336-7387, or 1-208-336-7397; Cable NMRMP; Telex 3717411 NMRMP; Telecopier 1-208-336-1471 NMRMP.

PREGNANT AIDS CARRIERS PRESENT HIGH RISK FOR NEWBORNS

Women found to be carrying AIDS antibodies should be aware of the high risk of transmitting the virus to a fetus during pregnancy, according to Dr. Robert Murphy, Assistant Professor, Department of Medicine, Northwestern University, Chicago.

Centers for Disease Control (CDC) estimates that viral antibodies to HTLV-III will be detected in 50-60 percent of all babies born to mothers who test positive for the presence of AIDS antibodies on the ELISA and the Western Blot confirmatory tests.

"Only when we are convinced that there is a strong possibility that a woman can potentially pass AIDS to a fetus do we advise the patient of the risks involved and the option of delaying pregnancy", said Dr. Murphy.

The virus can be transmitted to the fetus through normal placenta blood exchange during pregnancy, in labor and delivery. However, infants may not show signs of exposure to AIDS for four to six months after birth because it takes that long for antibodies to develop.

Dr. Murphy advises infected women who decide to have a baby to abstain from breastfeeding, since the virus may be carried in the mother's milk as well as in their blood.

"In a person with mature digestive and immune system this might not be a problem. But in a neonate, these functions are immature. For this reason, a baby is more susceptible to many illnesses. An HTLV-III infection may be one of those."

CDC evidence to support this recommendation lies in a case of a mother who apparently contracted AIDS through blood transfusions shortly after giving birth. The mother breastfed her baby for six weeks. The infant eventually developed AIDS. In addition, the AIDS virus recently was isolated in the breast milk of an infected mother.

All milk banks in the country are taking precautions to pinpoint donors who may be at high risk for AIDS, according to Dr. Marianne Neifert, Medical Director, Mother's Milk Bank at AMI St. Luke's Hospital, Denver. Some, such as Mother's, are even conducting mandatory HTLV-III tests.

In addition, studies show there are also greater risks involved in the further development of AIDS in pregnant women who test positive. "A pregnant woman is naturally immune-deficient. That means that the immune system, which AIDS attacks, is weaker. The theory holds that if a woman is carrying the virus, the chance that AIDS will develop during pregnancy may increase."

keeping up

Category 1 Continuing Medical Education Programs Available in Arkansas

INTERDISCIPLINARY MENTAL HEALTH CARE OF THE ELDERLY

Presented by Fred O. Henker, III, M.D. and Cornelia Beck, R.N., Ph.D., *April 30, 8:30-4:30 p.m.; May 1, 8:30 a.m.-4:30 p.m.; May 2, 8:30 a.m.-12:00 noon,* University Conference Center, 5 Statehouse Plaza, Little Rock. Twelve and one-half hours Category I credit. Fee: $75. Sponsored by UAMS.

ANESTHESIA UPDATE 1986

Presented by Richard B. Clark, M.D., *May 2, registration 6:30 p.m.; May 3, 7:15 a.m.-5:00 p.m.,* Capital Hotel, Little Rock. Seven hours Category I credit. ASA members and Anesthesia residents free. Non-ASA members $10; CNRA's $20. Sponsored by UAMS.

ARTHRITIS AND BURSITIS—CLINICAL ASPECTS/ PROSTHESIS APPLICATION

Presented by Thomas Brower, M.D., *May 20, 7:00 p.m.,* Education Building, Baxter Regional Hospital, Mountain Home. Two hours Category I credit. Sponsored by Baxter County Regional Hospital.

GRECC CONFERENCE—ASSESSMENT AND MANAGEMENT OF CANCER IN THE ELDERLY

Presented by David A. Lipschitz, M.D., Ph.D., and Ronnie Chernoff, Ph.D., R.D., *June 12, 7:30 a.m.-5:00 p.m.*, Airport East Holiday Inn, Little Rock. Five and one-half hours Category I credit. Fee $50; VA employees $25. Sponsored by UAMS.

ANNUAL CADUCEUS CLUB ALUMNI WEEKEND —SCIENTIFIC SESSION

Presented by Robert W. Bradsher, M.D., *June 14*. Sponsored by UAMS. Time, location, credit hours, etc., to be announced.

SPORTS MEDICINE SEMINAR JUNE 14

Call the Medical Education Office at Baptist Medical Center, 227-2672, for further information.

EIGHTH ANNUAL FAMILY PRACTICE INTENSIVE REVIEW

Presented by Ben N. Saltzman, M.D., *June 20-22*. Sponsored by UAMS. Time, location, credit hours, etc., to be announced.

RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I Credit.

EL DORADO — AHEC-SOUTH ARKANSAS

Surgical Conference, first, second and third Monday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Pathology Conference, second Tuesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Tumor Clinic, fourth Tuesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Internal Medicine Conference, first, second, and fourth Wednesday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Chest Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.
Obstetrics-Gynecology Conference, fourth Thursday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Behavioral Sciences Conferences, first and fourth Friday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Gyn-Pathology Conference, second Friday, 12:15 p.m. to 1:00 p.m., AHEC-South Arkansas.
Pediatric Conference, third Friday, 12:00 p.m. to 1:00 p.m., Union Medical Center.

FAYETTEVILLE — AHEC-NORTHWEST

Medicine Teaching Conference, first, third and fifth Friday, 7:30 a.m. to 8:30 a.m., Baker Conference Room, Washington Regional Medical Center.

FAYETTEVILLE — VA MEDICAL CENTER

Pathology-Mortality Conference, second Thursday, 3:00 p.m., VAMC.
Radiology Conference, third Thursday, 1:00 p.m., VAMC.
ICU Lecture Series, second Friday, 1:30 p.m., VAMC.

JONESBORO — AHEC-NORTHEAST

AHEC Lecture Series, first and third Tuesday, 12:00 noon, Stroud Hall, St. Bernard's Annex Building.
Interesting Case Conference, second Tuesday and fifth Tuesday when applicable, 12:00 noon, St. Bernard's Dietary Conference Room.
Methodist Hospital of Jonesboro CME Staff Conference, second Tuesday, 7:30 p.m., Methodist Hospital of Jonesboro Cafeteria.
Monthly Medical Lecture Series, third Tuesday, 7:30 p.m., rotates each month between Walnut Ridge and Pocahontas.
Chest Conference, fourth Tuesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Perinatal Conference, second Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Tumor Conference, fourth Wednesday, 12:00 noon, St. Bernard's Dietary Conference Room.
Arkansas Methodist Hospital CME Conference, last Friday, 7:00 a.m., AMH, Paragould.

LITTLE ROCK — ARKANSAS CHILDREN'S HOSPITAL

Pediatric Radiology Conference, each Monday, 12:00 noon, Second Floor Classroom.
Pulmonary Conference, each Monday, 3:00 p.m., Second Floor Classroom.
Pediatric Grand Rounds, each Tuesday, 8:00 a.m., Second Floor Classroom.
Genetics Conference, each Wednesday, 1:00 p.m., Annex Conference Room.
Infectious Disease Conference, second Wednesday, 12:00 noon, Second Floor Classroom.
Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.
Pediatric Pharmacology Conference, third Wednesday, 12:00 noon, Second Floor Classroom.
Pediatric Neuroscience Conference, first Thursday, 8:00 a.m., Second Floor Classroom.
Problem Case Conference, each Thursday, 12:00 noon, Second Floor Classroom.
Neuro/Oncology Conference, third Thursday, 8:00 a.m., Second Floor Classroom.
General Pediatrics Seminar, each Friday, 12:00 noon, Second Floor Classroom.
Pediatric Research Conference, third Monday, 12:00 noon, Second Floor Classroom.
Renal-Cardiology Conference, second Tuesday, 12:00 noon, Second Floor Classroom.
Pediatric Neuropsychiatry Conference, second Wednesday, 1:30 p.m., Polly R. Thomas Conference Room.

Pathology Conference, each third Tuesday, 3:00 p.m. to 4:00 p.m., Pathology Library.
Grand Rounds, each Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.
Surgery Conferenee, each Thursday, 7:30 a.m. to 8:30 a.m., Conference Room #2.
Anesthesiology Conference, third Thursday, 7:00 a.m. to 8:00 a.m., Conference Room #1.

LITTLE ROCK — ST. VINCENT INFIRMARY

Pediatric Conferenee, first Tuesday, 12:30 p.m. to 1:30 p.m., Classroom 1, Education Wing.
Interhospital Urology Grand Rounds, first Tuesday, 5:30 p.m. to 6:30 p.m., Classroom 1, Education Wing.
General Medieine Journal Club, first and third Tuesday, 12:00 noon to 1:00 p.m., Medical Affairs Conference Room.
Peripheral Vaseular Disease Conference, third Tuesday, 6:00 p.m. to 7:00 p.m., Classroom 1, Education Wing.
Neuropathology Conference, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1174K, Laboratory.
Cancer Conference, first Wednesday, 12:00 noon to 1:00 p.m., CARTI Auditorium.
Pulmonary Conferenee, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Classroom 1, Education Wing.
Hematology-Oncology Conference, second Thursday, 12:00 noon to 1:00 p.m., Laboratory Library.
Caneer Conference, third and fourth Thursday, 12:00 noon to 1:00 p.m., Room S1174K, Laboratory.

LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Anesthesia Lecture Series, each Tuesday, 7:00 a.m.; each Wednesday, 4:00 p.m., UAMS Education Building, Room G/106.
Anesthesia Morbidity and Mortality Conference, each Thursday, 1:00 p.m., UAMS Education Building, Room G/106.
GI Basic Science Conference, each Thursday, 7:30 a.m., UAMS Education Building, Room G/108A&B.
Medieine Grand Rounds, each Thursday, 12:15 p.m., UAMS Shorey Auditorium.
Medieine Research Conference, each Tuesday, 8:00 a.m., UAMS Shorey Building, Room 8/105.
Interdisciplinary Gynecologie Cancer Conference, each Friday, 12:30 p.m., UAMS Education Building, Room G106A&B.
OB/Gyn Grand Rounds, each Wednesday, 7:30 a.m., UAMS Education Building, Room G/141B.
Psyehiatry Grand Rounds, each Friday, 11:00 a.m., UAMS Shorey Auditorium.
Psyehiatry Case Conference, each Friday, 12:00 noon, UAMS Shorey Auditorium.
Ophthalmology Problem Case Conference, each Thursday, 4:00 p.m., UAMS ACC Eye Clinic, Room 3/150.

LITTLE ROCK — BAPTIST MEDICAL CENTER

Pulmonary Conference, each Tuesday, 12:00 noon to 1:00 p.m., Shuffield Auditorium.
Orthopaedie Fracture Conference, each Tuesday, 7:30 a.m., UAMS Education Building, Room B/135.
Orthopaedic Bibliography Conference, each Tuesday, 8:30 a.m., UAMS Education Building, Room B/135.
Orthopaedie Grand Rounds, each Tuesday, 10:00 a.m., UAMS Education Building, Room B/135.
Orthopaedie Basic Science Conference, each Tuesday, 11:00 a.m., UAMS Education Building, Room B/135.
Surgical Science Conference, each Saturday, 8:00 a.m., UAMS Education Building, Room G/131.
Surgery Grand Rounds, each Saturday, 9:00 a.m., UAMS Education Building, Room G/131.
St. Vincent Urology Grand Rounds, first Tuesday, 5:30 p.m., St. Vincent Infirmary, Education Building, Room 159.
Urology Grand Rounds/Urologic Topies, two to three times monthly (each) 5:00 p.m., UAMS or VAMC.
Urology Morbidity and Mortality Workshop/Uro-Radiology Workshop, each once monthly, 5:00 p.m., UAMS (dates vary).
VA Medieal Service Teaching Conferenee, each Thursday, 8:00 a.m., NLRVA, Building 66, Room 38.
VA Surgery Grand Rounds, each Thursday, 12:45 p.m., LRVA, Room 2D109.
VA Weekly Cancer Conference (Surgical Serviee), each Tuesday, 1:00 p.m., LRVA, Room 2D109 and 2D109.

PINE BLUFF — AHEC

Sub-Speeialty Conference, first Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Obstetrics/Gyneeology Conference, second Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Radiology Conference, third Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Southeast Arkansas Medieal Lecture Series, third Tuesday, 6:30 p.m., Rosswood Country Club (dinner meeting).
Family Practiee Conference, fourth Tuesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Surgery Conferenee, first Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Internal Medieine Conferenee, second and fourth Wednesday, 12:30 to 1:30 p.m., Jefferson Regional Medical Center.
Pediatric Conference, third Wednesday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Behavioral Scienee Conference, each Thursday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.
Chest Conference, second and fourth Friday, 12:30 p.m. to 1:30 p.m., Jefferson Regional Medical Center.

TEXARKANA — AHEC

Tumor Conference, first Wednesday, 7:00 a.m., St. Michael Hospital.
Chest Conference, May 14 and July 16, 12:30 p.m., St. Michael Hospital.

As organizations accredited for continuing medical education by the Accrediation Council for Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

THINGS TO COME

May 31

1986 Plastic Surgery Videoteleconference. Sponsored by the Plastic Surgery Educational Foundation of the American Society of Plastic and Reconstructive Surgeons and the Hospital Satellite Network. Each conference two hours Category I CME credit. The two-hour videoteleconferences include "Rhytidectomy", May 31st; "Myocutaneous Flaps", September 20th; and "Ear Reconstruction", November 22nd. Cost for videotapes — $165 for ASPRS/PSEF members; $200 for non-members. For further information write American Society of Plastic and Reconstructive Surgeons, Inc., 233 North Michigan Avenue, Suite 1900, Chicago, Illinois 60601 or call 1-312-856-1818.

June 9-13

Physician in Management Seminars I and II. The Antlers Hotel, Colorado Springs, Colorado. Sponsored by the American Academy of Medical Directors. 31 CME credits. For more information contact Sherry Mason, American Academy of Medical Directors, 4830 West Kennedy, Suite 648, Tampa, Florida 33609; telephone 1-813-873-2000.

June 12-14

Controversies in Pediatric Practice. Park Vista Hotel, Gatlinburg, Tennessee. Sponsored by the University of Tennessee College of Medicine, Department of Pediatrics, Knoxville Unit and Knoxville Area Pediatric Society. 12 hours Category I/PREP credit. For more information contact Dr. Sandra Loucks, University of Tennessee Research Center and Hospital, Department of Pediatrics, 1924 Alcoa Highway, Knoxville, Tennessee 37920; 1-615-544-9331.

June 16-20

Medical Technology Assessment for Health Professionals. Sponsored by the Alfred P. Sloan School of Management, Massachusetts Institute of Technology. CME credit offered. Program will address ways in which technology assessment will affect the use of equipment, procedures and tests in hospitals' current economic environment. For more information contact Director of the Summer Session, Room E19-356, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139; telephone 1-617-253-2101.

August 3-19

Study Tour: Children's Health Care In Central America. Sponsored by the University of Arkansas at Little Rock. Will tour children's health care projects in Guatemala, Honduras, Nicaragua and Costa Rica. Registration approximately $1,200 per person. C.E.U. credits available. For more information and itinerary contact Gene Stanford, Ph.D., Arkansas Children's Hospital, 800 Marshall Street, Little Rock, Arkansas 72202; telephone 1-501-370-1149 (days), 1-501-224-4020 (evenings).

September 17-19

American Cancer Society National Conference on Gynecologic Cancer — 1986. Atlanta Hilton, Atlanta, Georgia. 16½ hours AMA Category I credit. Registration before September 3, 1986: $200.00 physicians, $100.00 other health professionals; Fee after September 3, 1986: $250.00 physicians; $150 other health professionals. No registration fee for students, interns, residents, and American Cancer Society Fellows or Career Development Awardees. For more information write American Cancer Society, 90 Park Avenue, New York, New York 10016.

September 22-26

Postgraduate Institute for Emergency and Primary Care Physicians, Symposia I, II, and III, and Optional Advanced Emergency Procedures Laboratory. San Diego, California. ER I—September 22-26, 1986; January 12-16, 1987; and May 4-8, 1987. ER II—August 18-22, 1986; December 8-12, 1986; March 16-20, 1987; and August 17-21, 1987. ER III—June 16-20, 1986; October 27-31, 1986; June 22-26, 1987. For brochure and more information contact Office of Continuing Medical Education, University of California San Diego School of Medicine, M-017, La Jolla, California 92093; telephone 1-619-452-3940.

December 14

Antarctic Medical Seminars. The Lecture Room of the ship M. S. Society Explorer. Depart and return to Miami, Florida. Sponsored by International Medical Seminars. Itinerary will be Puenta Arenas, Chile, Strait of Magellan, Beagle Channel, Cape Horn, Drake Passage, Ant-

arctic Peninsula, Falkland Islands and South Georgia. 25 hours AMA Category I. Additional cruise dates: January 9, 1987 and January 30, 1987. Fee for medical seminar tuition is $400.00. For additional information contact International Medical Seminars, 125 Main Street, Westport, Connecticut 06880; telephone 1-203-222-0560 or 1-800-551-0019.



PERSONAL AND NEWS ITEMS

DOCTOR NAMED FELLOW

Dr. Jim C. Kizziar of Little Rock has been elected a Fellow in the American College of Cardiology.

DR. McFARLAND RECEIVES AWARD

The American Academy of Pediatrics has awarded Dr. Louis R. McFarland of Hot Springs the PREP (Pediatrics Review and Education Program) Fellowship Award. The award recognizes members who have actively participated in PREP for six consecutive years.

DOCTOR RECERTIFIED

Dr. Ted E. Ashcraft of Russellville has been recertified by the American Academy of Family Physicians.

DOCTORS APPOINTED TO BOARD

Governor Clinton recently made two appointments to the State Medical Board. They are Dr. James Gardner of Hot Springs who will replace Dr. Frank Burton and Dr. Jim Lytle of Batesville who will replace Dr. Hugh Edwards.

DOCTOR DISCUSSES ACRC

Dr. Nancy Snyderman discussed the Arkansas Cancer Research Center with the Razorback Lost Chord Club. The Club sponsored by the American Cancer Society is composed of laryngectomy patients.

PHYSICIANS SELECTED OFFICERS

The Memphis Society of Otolaryngology has selected Dr. Paul N. Pettit as President and Dr. John M. Hodges as Secretary. Drs. Pettit and Hodges are from West Memphis.

DR. EWING JOINS PRACTICE

Dr. Jon R. Ewing, a family practitioner from Brinkley, has joined the practice of Dr. W. L. Walker.

DOCTOR ADDRESSES LIONS CLUB

Dr. H. Howard Cockrill, Jr. of Little Rock spoke to the Oak Forest Lions Club on magnetic resonance imaging. The meeting was scheduled through the Arkansas Medical Society's Speakers Bureau.

AMA AUXILIARY CANDIDATE

Mrs. Kemal E. (Virginia) Kutait is a candidate for Secretary in the American Medical Association Auxiliary for 1986-87.



NEW MEMBERS

Pulaski County Medical Society has eight new members.

DR. BARBARA JEAN BOZEMAN

Dr. Bozeman is an Obstetrician/Gynecologist practicing at 500 South University Avenue, Suite 317 in Little Rock. She is a native of Hawkinsville, Georgia. She received her pre-medical education from Tennessee State University and her medical degree from Meharry Medical College School of Medicine in Nashville. Her internship and residency was with the George W. Hubbard Hospital in Nashville.

DR. MICHAEL FERRELL BROWN

Dr. Brown is an Assistant Professor of Ophthalmology at the University of Arkansas College of Medicine and is board certified. He graduated from the University of Arkansas at Fayetteville in 1973 and the University of Arkansas College of Medicine in 1978. He served an internship at Baptist Medical Center in Little Rock and an Ophthalmology residency at University of Arkansas for Medical Sciences.

Dr. Brown is a native of Clarksville.

DR. HAROLD DOUGLASS CRALL

Dr. Crall is a 1977 graduate of Vanderbilt University in Nashville, Tennessee and a 1981 graduate of the University of Arkansas College of Medicine. He served his internship and residency in Gynecology at the University of Arkansas for Medical Sciences.

Dr. Crall, a native of Jonesboro, is in the practice of Obstetrics/Gynecology at #1 Lile Court, Suite 200 in Little Rock.

DR. JOHN CHARLES HENRY

Dr. Henry is in the practice of Ophthalmology in Little Rock at 9110 Kanis Road. He is a native of Vallejo, California and a graduate of Rhodes University in Memphis, Tennessee. He received his medical education from the University of Arkansas College of Medicine in 1980. Dr. Henry served in the intern program at University of Arkansas for Medical Sciences and the Ophthalmology residency program at the University of Tennessee at Memphis and a glaucoma fellowship at the University of Pennsylvania at Philadelphia.

DR. WALTER MICHAEL JAY

Dr. Jay is also an Associate Professor of Ophthalmology at the University of Arkansas College of Medicine. He received a bachelors degree from Loyola University in Chicago and his medical degree from the University of Chicago Pritzker School of Medicine in 1976. He served an Ophthalmology residency at the University of Chicago Medical Center and a fellowship in the Neuro-Ophthalmology program at the University of California at San Francisco.

Dr. Jay served four years as an Associate Professor of Ophthalmology at the Medical College of Georgia School of Medicine in Atlanta and as Chief of Ophthalmology at the Veterans Medical Center in Augusta, Georgia.

Dr. Jay, a board certified Ophthalmologist, is a native of Evergreen, Illinois.

DR. MARK PHILIP McANDREW

Dr. McAndrew, a native of Kalona, Iowa, is on the Orthopaedic staff at University of Arkansas for Medical Sciences.

He obtained a Bachelor of Science degree from the University of Iowa and his medical degree from the University of Arkansas College of Medicine in 1978. He is board certified by the American Board of Orthopaedic Surgeons.

Dr. McAndrew was on the staff at the Texas Tech University School of Medicine in Lubbock, Texas before moving to Little Rock.

DR. SARKIS MARCEL NAZARIAN

Dr. Nazarian is a Neurologist at the John L. McClellan Veterans Administration Medical Center in Little Rock. He is a native of Istanbul, Turkey.

Dr. Nazarian graduated from the University of Illinois College of Medicine in 1980 and served an internship in the Internal Medicine program at Baylor University College of Medicine in Houston, Texas. He served a Neurology residency in the Yale University School of Medicine program and a fellowship in Neuro-Ophthalmology at Wills Eye Hospital in Philadelphia.

DR. JUDY GAIL RILEY

Dr. Riley is a native of New Orleans, Louisiana.

Dr. Riley graduated from Dillard University in New Orleans with a Bachelor of Science Degree and obtained her medical degree in 1979 from Meharry Medical College School of Medicine at Nashville, Tennessee where she also served in the internship and residency program.

She is in the practice of Pediatrics at 1529 South University in Little Rock. Dr. Riley was in private practice for three years in Selma, Alabama before moving to Little Rock.

* * * *

DR. DAVID WALLACE HUNTON

Dr. Hunton, a board certified Surgeon, is a new member of the Sebastian County Medical Society. He is a native of Little Rock and is affiliated with Cooper Clinic in Fort Smith.

Dr. Hunton graduated from the University of Arkansas at Fayetteville in 1976. He received his medical degree in 1978 from the University of Arkansas College of Medicine. He served an internship and residency in Surgery at the University of Arkansas for Medical Sciences. Dr. Hunton practiced in Little Rock two years before moving to Fort Smith.

DR. JOHN L. KAREUS

Dr. Kareus is another new member of the Sebastian County Medical Society and is also affiliated with Cooper Clinic in Fort Smith. He is a native of Detroit, Michigan and a 1973 graduate of the University of Colorado. His medical education was obtained from the University of Osteopathic Medicine and Health Sciences Center in Des Moine, Iowa. He served an internship at Phoenix General Hospital in Phoenix, Arizona and a residency in the University of Louisville program in Louisville, Kentucky.

Dr. Kareus has served three years as a general medical officer of the Public Health Service in the Indian Health Services division.

DR. EDWARD R. TEITEL

Dr. Teitel, a new member of the Jackson County Medical Society, is a board certified General Surgeon at the Newport Hospital and Clinic. He is a native of Cleveland, Ohio.

Dr. Teitel received his pre-medical education from the Sul Ross University in Alpine, Texas and his medical education from the University of Texas Medical School in San Antonio. He served an internship at Henry Ford Hospital in Detroit and a residency at St. Joseph Mercy Hospital in Pontiac, Michigan.

Dr. Teitel has been practicing in Newport since last September.

DR. MASON C. ROBBINS

Dr. Robbins has joined the Washington County Medical Society. Dr. Robbins, a Neurologist, has been affiliated with the Veterans Administration Medical Center in Fayetteville since 1975. His office is located at 2700 American Drive in Springdale. He is a native of Mitchell, South Dakota.

Dr. Robbins graduated from the University of Minnesota in 1951 and the University of Minnesota Medical School in 1954. He served his internship at the Veterans Administration Medical Center in Long Beach, California and his residency in Neurology with the University of Minnesota Program.

Before moving to Arkansas Dr. Robbins was in private practice in St. Paul, Minnesota, for two years and was affiliated with the Veterans Administration Medical Center in Sheridan, Wyoming for eleven years.

DR. SAM L. SCHULTZ

Dr. Schultz, a board certified Pediatrician, is the Medical Consultant for the Infant and Child Health Division of the Arkansas Department of Health. Dr. Schultz has been affiliated with the Arkansas Department of Health since 1975. He has recently acquired a Masters in Public Health. He is a native of Ardmore, Oklahoma. Dr. Schultz has recently joined the White County Medical Society.

His pre-medical education was obtained from Baylor University in Waco, Texas and his medical education from the University of Texas Medical Branch at Galveston in 1970. He served an internship through the University of Kansas Medical Center Program and a residency in Pediatrics at the University of Arkansas for Medical Sciences.

DR. JAMES S. MIZE

Dr. Mize has joined the Greene-Clay County Medical Society. He is a native of Macon, Mississippi.

Dr. Mize received his pre-medical education from Tulane University and is a 1961 graduate of Tulane University School of Medicine. He served his internship with the United States Public Health Service Hospital in Seattle, Washington and his residency in General Surgery at St. Joseph Hospital in Denver, Colorado.

Dr. Mize is a board certified Surgeon. His office is located in the Medical Arts Building in Corning.

OBITUARY

DR. JAMES W. BURNETT

Dr. Burnett of Texarkana died February 11, 1986. He was born in Little Rock on March 29, 1911.

Dr. Burnett was a graduate of the University of Arkansas and Tulane Medical School. He served in the 35th Medical Battalion during

World War II.

Dr. Burnett is survived by his wife, Frances E. Gantt Burnett, two sons, Robert and David Burnett of Texarkana and a daughter, Barbara Burnett Smith of Dallas, Texas.

DR. LORENZO DOW MASSEY, JR.

Dr. Massey of Osceola died April 4, 1986. Dr. Massey practiced internal medicine for 56 years before retiring.

Dr. Massey served as a colonel in the medical service in both World Wars. He was a 50-year Mason, a member of the American College of Physicians, the Royal Society of Medicine, the Kiwanis Club, the Lions Club, the Golden Key Club, and the Sons of the American Revolution.

Dr. Massey is survived by two daughters, Mrs. Charline Watson and Mrs. Annie M. Peterson of Memphis, Tennessee.

RESOLUTIONS



DR. WILBUR G. LAWSON

WHEREAS, the members of the Washington County Medical Society note with sincere and deep sorrow the tragic death of their colleague, Dr. Wilbur G. Lawson, and

WHEREAS, Dr. Lawson had a distinguished career in the field of medicine, having graduated at age twenty from the University of Arkansas School of Medicine, having served as professor of the Pediatric Department at age twenty-four and having served as chairman of the Pediatric Department while in his twenties, and

WHEREAS, Dr. Lawson was co-founder of the Fayetteville Pediatric Clinic and was a dedicated practitioner in the specialty of Pediatrics, and

WHEREAS, Dr. Lawson devoted his energy and talents to his profession and his community through such projects as the study of prenatal risk factors and birth defects, and

WHEREAS, Dr. Lawson has been a respected member of this Society for twenty-five years,

NOW, THEREFORE, BE IT RESOLVED that the Washington County Medical Society extends to the family of Dr. Lawson its grief and sense of loss, and

BE IT FURTHER RESOLVED that this resolution be submitted for publication in the *Journal of the Arkansas Medical Society*.

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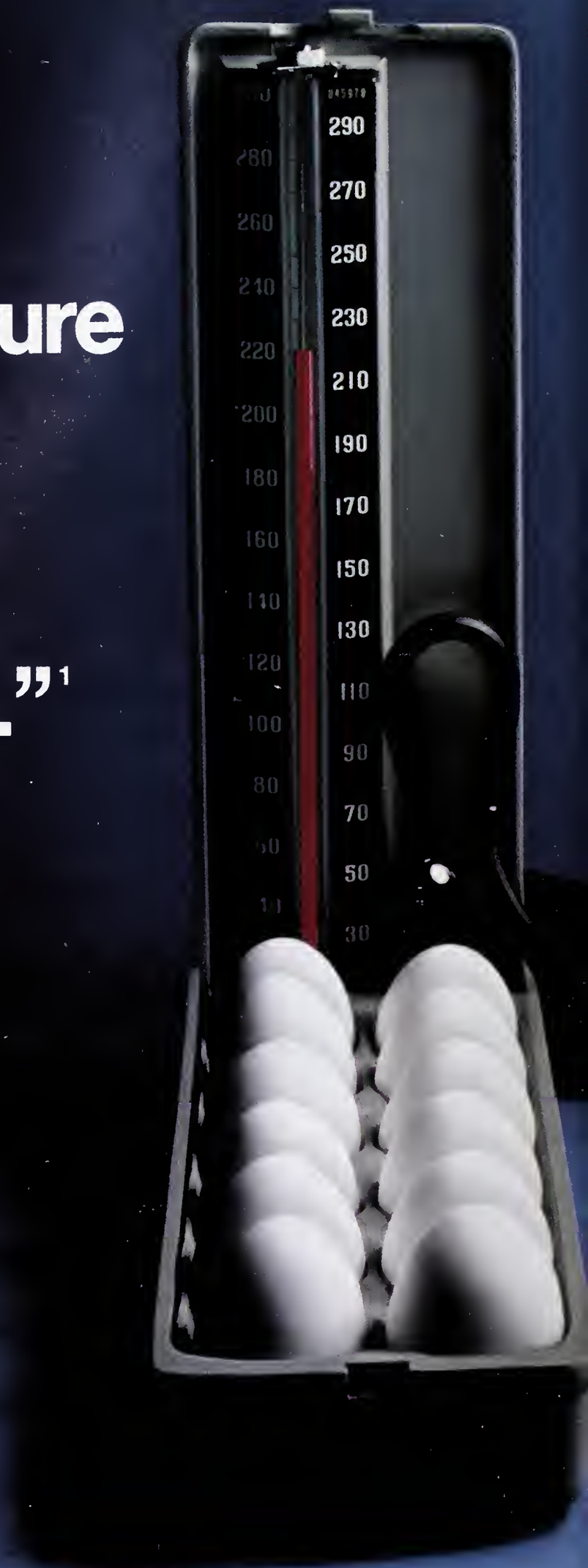
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The Framingham Heart Study[2] showed that over two thirds of the 35 and older population in that study with systolic blood pressures over 145 mmHg also had serum cholesterol levels of 225 mg/dL or more, and 46% had levels above 250 mg/dL.

While many clinical laboratories still report 250 mg/dL as "normal" cholesterol, the NIH Consensus Development Conference Statement on Cholesterol and Heart Disease[3] stated that any level above 220 mg/dL is associated with a significantly increased risk of coronary heart disease.

You need to know, because high cholesterol parallels high blood pressure as a CHD risk factor.

Epidemiological studies and large-scale prevention trials have indicated that as with blood pressure, serum cholesterol levels are proportionately related to CHD risk.

Specifically, *"...for every 10 mmHg rise in pressure, there appears to be about a 30% rise in cardiovascular risk."*[4] *"...for every one percent you go up the American cholesterol scale, your subsequent rate of heart attack rises two to three percent."*[5]

And although the specific impact on CHD has not been determined, we know that many of the principal agents used to lower blood pressure actually increase cholesterol.

Wytensin® lowers blood pressure effectively without raising cholesterol.

While Wytensin is not a cholesterol-lowering agent and is not indicated for the treatment of hyperlipidemia, in controlled clinical trials[6] it caused a slight, sustained decrease in total cholesterol without reducing the HDL fraction or altering serum triglycerides.

At the same time, Wytensin lowered blood pressure as effectively as hydrochlorothiazide, propranolol, clonidine or methyldopa. Drowsiness and/or dry mouth, the most frequent side effects noted with Wytensin, usually diminish or disappear over time. In fact, in double-blind studies to date, discontinuance of therapy for all side effects occurred in about 13% of patients.

WyTensin®
(guanabenz acetate)

Antihypertensive therapy that does not increase cholesterol



See important information on following page.

References: 1. Glueck CJ: Remarks in the symposium, *Blood Pressure, Cholesterol and Coronary Heart Disease*, Washington, D.C., March 31, 1985. 2. *The Framingham Study, An epidemiological investigation of cardiovascular disease*, Section 28, U.S. Dept. of Health, Education, and Welfare. 3. National Institutes of Health Consensus Development Conference Statement, 1984: Vol 5, No 7, p 4. 4. Chobanian AV: The influence of hypertension and other hemodynamic factors in atherogenesis. *Progress in Cardiovascular Diseases, XXVI* (3): 177, Nov/Dec, 1983. 5. Castelli WP: Remarks in the symposium, *Blood Pressure, Cholesterol and Coronary Heart Disease*, Washington, D.C., March 31, 1985. 6. Data on file, Wyeth Laboratories.

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Wytensin®
(guanabenz acetate)

Antihypertensive therapy that does not increase cholesterol

Brief Summary

Before prescribing, consult the complete package circular.

Indications and Usage: Treatment of hypertension, alone or in combination with a thiazide diuretic

Contraindication: Known sensitivity to the drug.

Precautions: 1. Sedation. Causes sedation or drowsiness in a large fraction of patients. When used with centrally active depressants, e.g., phenothiazines, barbiturates and benzodiazepines, consider potential for additive sedative effects. 2. Patients with vascular insufficiency. Like other antihypertensives use with caution in severe coronary insufficiency, recent myocardial infarction, cerebrovascular disease, or severe hepatic or renal failure. 3. Rebound: Sudden cessation of therapy with central alpha agonists like **Wytensin** may rarely result in "overshoot" hypertension and more commonly produces increase in serum catecholamines and subjective symptomatology.

INFORMATION FOR PATIENTS. Advise patients on **Wytensin** to exercise caution when operating dangerous machinery or motor vehicles until it is determined they do not become drowsy or dizzy. Warn patients that tolerance for alcohol and other CNS depressants may be diminished. Advise patients not to discontinue therapy abruptly.

LAB TESTS. In clinical trials, no clinically significant lab test abnormalities were identified during acute or chronic therapy. Tests included CBC, urinalysis, electrolytes, SGOT, bilirubin, alkaline phosphatase, uric acid, BUN, creatinine, glucose, calcium, phosphorus, total protein, and Coombs' test. During long-term use there was small decrease in serum cholesterol and total triglycerides without change in high-density lipoprotein fraction. In rare instances occasional nonprogressive increase in liver enzymes was observed, but no clinical evidence of hepatic disease.

DRUG INTERACTIONS. **Wytensin** was not demonstrated to cause drug interactions when given with other drugs, e.g., digitalis, diuretics, analgesics, anxiolytics, and antiinflammatory or antiinfective agents, in clinical trials. However, potential for increased sedation when given concomitantly with CNS depressants should be noted.

DRUG/LAB TEST INTERACTIONS. No lab test abnormalities were identified with **Wytensin** use.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY. No evidence of carcinogenic potential emerged in rats during a two-year oral study with **Wytensin** at up to 9.5 mg/kg/day, i.e., about 10 times maximum recommended human dose. In the Salmonella microsome mutagenicity (Ames) test system, **Wytensin** at 200-500 mcg per plate or at 30-50 mcg/ml in suspension gave dose-related increases in number of mutants in one (TA 1537) of five *Salmonella typhimurium* strains with or without inclusion of rat liver microsomes. No mutagenic activity was seen at doses up to those which inhibit growth in the eukaryotic microorganism, *Schizosaccharomyces pombe*, or in Chinese hamster ovary cells at doses up to those lethal to the cells in culture. In another eukaryotic system, *Saccharomyces cerevisiae*, **Wytensin** produced no activity in an assay measuring induction of repairable DNA damage. Reproductive studies showed a decreased pregnancy rate in rats given high oral doses (9.6 mg/kg), suggesting impairment of fertility. Fertility of treated males (9.6 mg/kg) may also have been affected, as suggested by decreased pregnancy rate of mates, even though females received drug only during last third of pregnancy.

PREGNANCY. Pregnancy Category C. WYTENSIN® MAY HAVE ADVERSE EFFECTS ON FETUS WHEN ADMINISTERED TO PREGNANT WOMEN. A teratology study in mice indicated possible increase in skeletal abnormalities when **Wytensin** is given orally at doses 3 to 6 times maximum recommended human dose of 10 mg/kg. These abnormalities, principally costal and vertebral, were not noted in similar studies in rats and rabbits. However, increased fetal loss has been observed after oral **Wytensin** given to pregnant rats (14 mg/kg) and rabbits (20 mg/kg). Reproductive studies in rats have shown slightly decreased live-birth indices, decreased fetal survival rate, and decreased pup body weight at oral doses of 6.4 and 9.6 mg/kg. There are no adequate, well-controlled studies in pregnant women. **Wytensin** should be used during pregnancy only if potential benefit justifies potential risk to fetus.

NURSING MOTHERS. Because no information is available on **Wytensin** excretion in human milk, it should not be given to nursing mothers.

PEDIATRIC USE. Safety and effectiveness in children less than 12 years of age have not been demonstrated; use in this age group cannot be recommended.

Adverse Reactions: Incidence of adverse effects was ascertained from controlled clinical studies in U.S. and is based on data from 859 patients on **Wytensin** for up to 3 years. There is some evidence that side effects are dose-related. Following table shows incidence of adverse effects in at least 5% of patients in study comparing **Wytensin** to placebo, at starting dose of 8 mg b.i.d.

Adverse Effect	Placebo (%) n = 102	**Wytensin** (%) n = 109
Dry mouth	7	28
Drowsiness or sedation	12	39
Dizziness	7	17
Weakness	7	10
Headache	6	5

In other controlled clinical trials at starting dose of 16 mg/day in 476 patients, incidence of dry mouth was slightly higher (38%) and dizziness was slightly lower (12%), but incidence of most frequent adverse effects was similar to placebo-controlled trial. Although these side effects were not serious, they led to discontinuation of treatment about 15% of the time. In more recent studies using an initial dose of 8 mg/day in 274 patients, incidence of drowsiness or sedation was lower, about 20%. Other adverse effects reported during clinical trials but not clearly distinguishable from placebo effects and occurring with frequency of 3% or less: Cardiovascular—chest pain, edema, arrhythmias, palpitations. Gastrointestinal—nausea, epigastric pain, diarrhea, vomiting, constipation, abdominal discomfort. Central nervous system—anxiety, ataxia, depression, sleep disturbances. ENT disorders—nasal congestion. Eye disorders—blurring of vision. Musculoskeletal—aches in extremities, muscle aches. Respiratory—dyspnea. Dermatologic—rash, pruritus. Urogenital—urinary frequency, disturbances of sexual function. Other—gynecomastia, taste disorders.

Drug Abuse and Dependence: No dependence or abuse has been reported.

Overdosage: Accidental ingestion caused hypotension, somnolence, lethargy, irritability, miosis, and bradycardia in two children aged one and three years. Gastric lavage and pressor substances, fluids, and oral activated charcoal resulted in complete and uneventful recovery within 12 hours in both. Since experience with accidental overdosage is limited, suggested treatment is mainly supportive while drug is being eliminated and until patient is no longer symptomatic. Vital signs and fluid balance should be carefully monitored. Adequate airway should be maintained and, if indicated, assisted respiration instituted. No data are available on **Wytensin** dialyzability.

Dosage and Administration: Individualize dosage. A starting dose of 4 mg b.i.d. is recommended, whether used alone or with a thiazide diuretic. Dosage may be increased in increments of 4 to 8 mg/day every one to two weeks, depending on response. Maximum dose studied has been 32 mg b.i.d., but doses this high are rarely needed.

How Supplied: (guanabenz acetate) Tablets, 4 mg, bottles of 100 and 500; 8 mg and 16 mg, bottles of 100.

Revised 2/14/85

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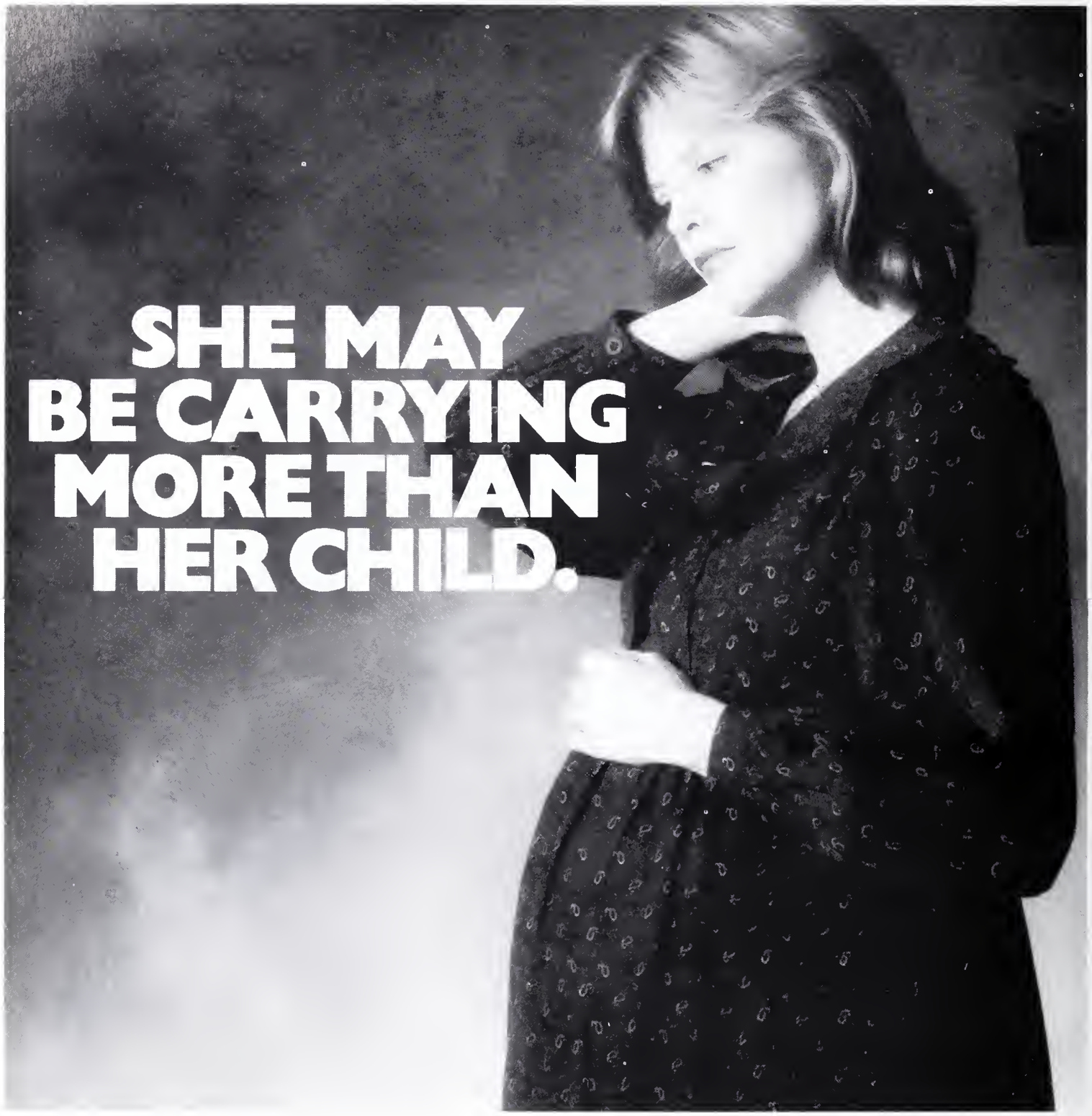
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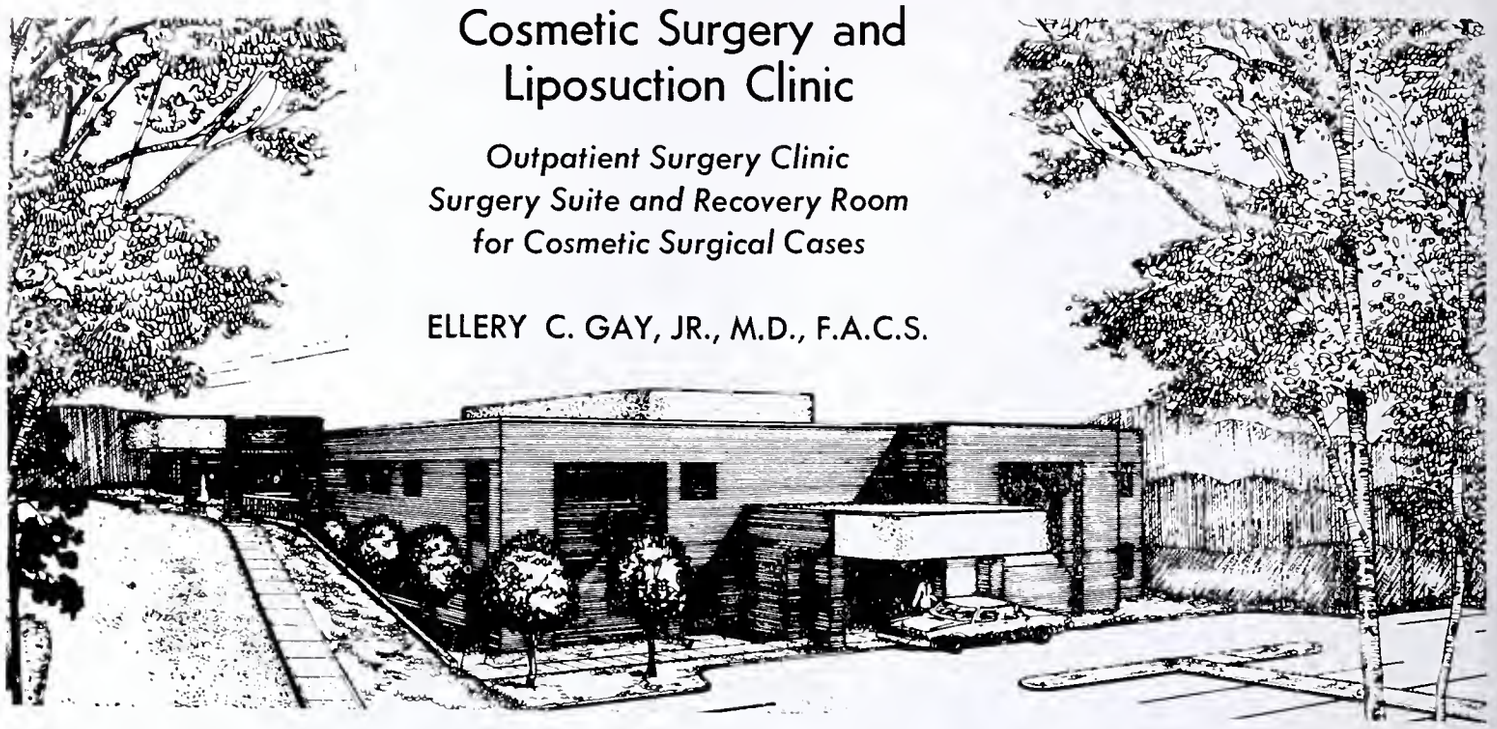
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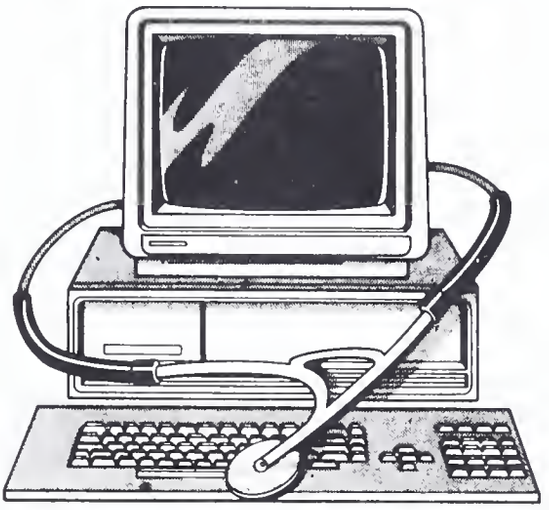
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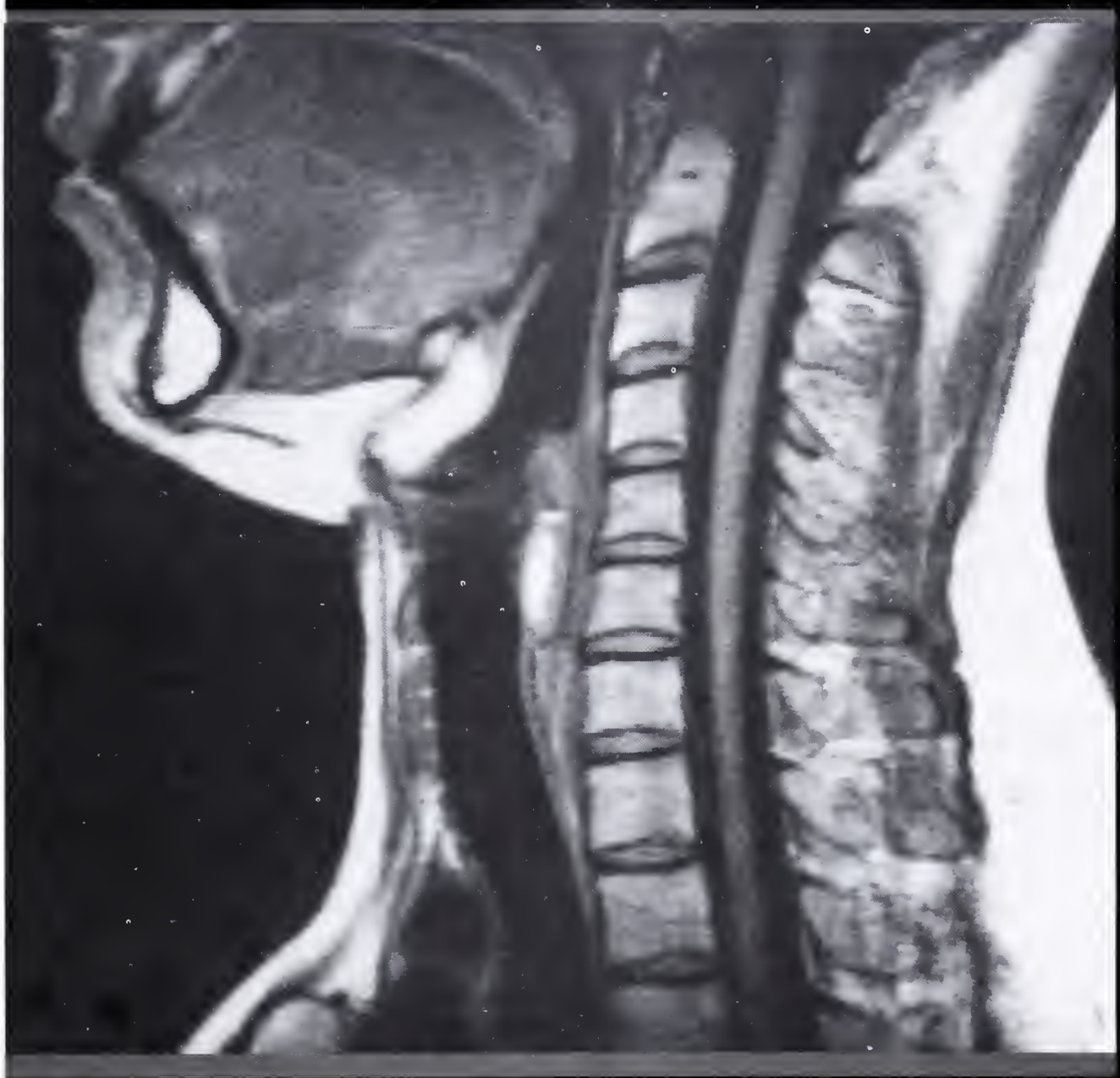
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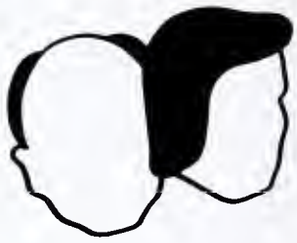
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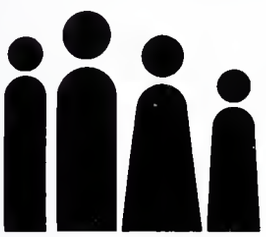
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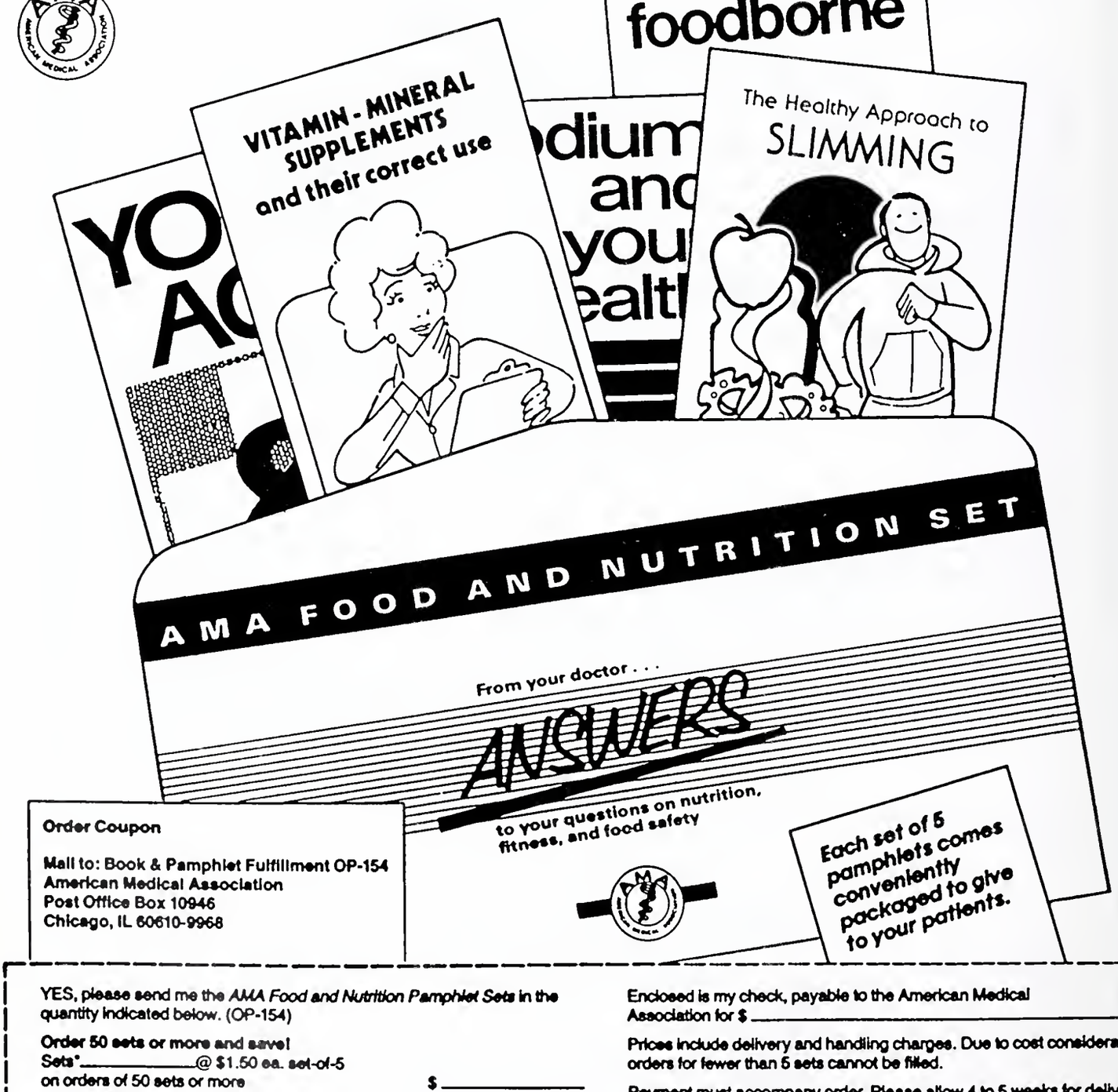
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